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**A REVISION OF THE SUPERFAMILY HISTEROIDEA
OF JAPAN [COLEOPTERA]**

By MASAHIRO ÔHARA

Abstract

ÔHARA, M. 1994. A revision of the superfamily Histeroidea of Japan [Coleoptera]. *Ins. matsum. n. s.* 51: 283 pp., 166 figs., 42 tabs.

The Japanese species of the superfamily Histeroidea are revised. A historical review shows that 113 species of the superfamily, including 6 species newly described and 2 species newly recorded in this revision, are known to occur in the Japanese territory including small islands in the Pacific Ocean. Morphology of external structures and their terms are presented. "Wenzel-Mazur System" is criticized from a phylogenetic viewpoint, and another cladogram is constructed for the subfamilies of the Histeridae. The 6 new species are *Hypocaccus akanensis*, *Platylomalus kusuii*, *Anapleus nakanei*, *A. nomurai*, *A. hagai*, and *Epierus uenoi*. *Gnathoncus communis* (Marseul) and *Chaetabraeus cohaeres* (Lewis) are newly recorded. *Boreochlamydus ohtanii* is transferred into the genus *Eucuritopsis*.

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* Newly recorded from Japan.

** Introduced to Japan.

1. INTRODUCTION

The superfamily Histeroidea is composed of 3 families, Sphaeritidae, Synteliidae and Histeridae. The Sphaeritidae and the Synteliidae are small families, comprising 3 and 5 known species, respectively. The Histeridae or histerid beetles form a fairly large group, containing about 3800 described species, and are broadly distributed over the world. The vast majority of the beetles are predators and found in most kinds of decaying organic matter, such as droppings, decomposing bodies of animals, compost piles and other decaying plant materials. Some species of histerid beetles have been well known as predacious cadavericolous insects controlling populations of dipterous flies and other insects (Summerlin et al., 1981, 1982, 1984, 1989a, b; Bornemissza, 1968).

In spite of their importance in biological control in nature, the histerids had long been neglected in Japan except in catalogues and faunal insect lists until modern revisions of some tribes and genera started to appear in the late 1980s (Ôhara and Nakane, 1986, 1989; Ôhara, 1986, 1989, 1991a, b, 1992a, b, c, 1993a). The present review is therefore the first comprehensive study of the superfamily in Japan; 113 species are dealt with taxonomically, with scattered pieces of biological and distribution information summed up. The Japanese species have generally been difficult to identify. It is hoped that this review makes them easily identifiable and stimulates further studies on their habitats, life histories, distributions and applied importance.

2. METHODS

General. This study is based mainly on dried specimens collected by me during 1980 – 1991 and by Dr. Takehiko Nakane; many further pinned specimens were borrowed from other institutions listed under Museum acronyms.

In this study were examined about 3,000 specimens from Japan and, in addition, about 300 specimens from Taiwan, 100 from Europe, and 100 from the rest of the world. I tried to examine the type specimens of some Japanese species, especially of problematic species, and have succeeded to borrow the types of the following species: *Plegaderus shikokensis*, *Hypocaccus varians hatsune*, *Anapleus semen*, *A. japonicus*, and *Hister simplicisternus*.

Specimens were collected under carrion or dung, or often in bait traps using chicken, or sometimes under bark.

General observations and dissection were carried out under the stereoscopic microscopes Olympus SD (magnification: up to x160) and Olympus SZH-131 (magnification: up to x128). Some structures were also observed in a SEM (Hitachi S-2000A).

Genitalia were removed from dried specimens, and then 1) heated in 10 % KOH at 60°C for about 1 hour or more according to the size; 2) washed and dissected in 70% ethyl alcohol (remaining muscles were removed), 3) transferred into lactic acid containing acid fuchsin and heated at 60°C for 3 hours, 4) transferred into a mixture of glacial acetic acid 1 part and methyl salicylate 1 part and left there for 30 minutes, and 5) observed in α -terpineol in a small glass dish.

Description format. For each described species, bibliographic and nomenclatural information is given first. Description includes measurements of body length and width

(Fig. 2). Measurements of some body parts, with mean, ranges, standard error and sample size, all in mm, are given in tables. Whenever possible, at least 20 specimens were measured for each sex. Abbreviations used in the measurements are as follows:

- PPL: length between anterior angles of pronotum and apex of pygidium.
 PEL: length between anterior angles of pronotum and apices of elytra.
 HOW: width between horns (projections) of epistoma.

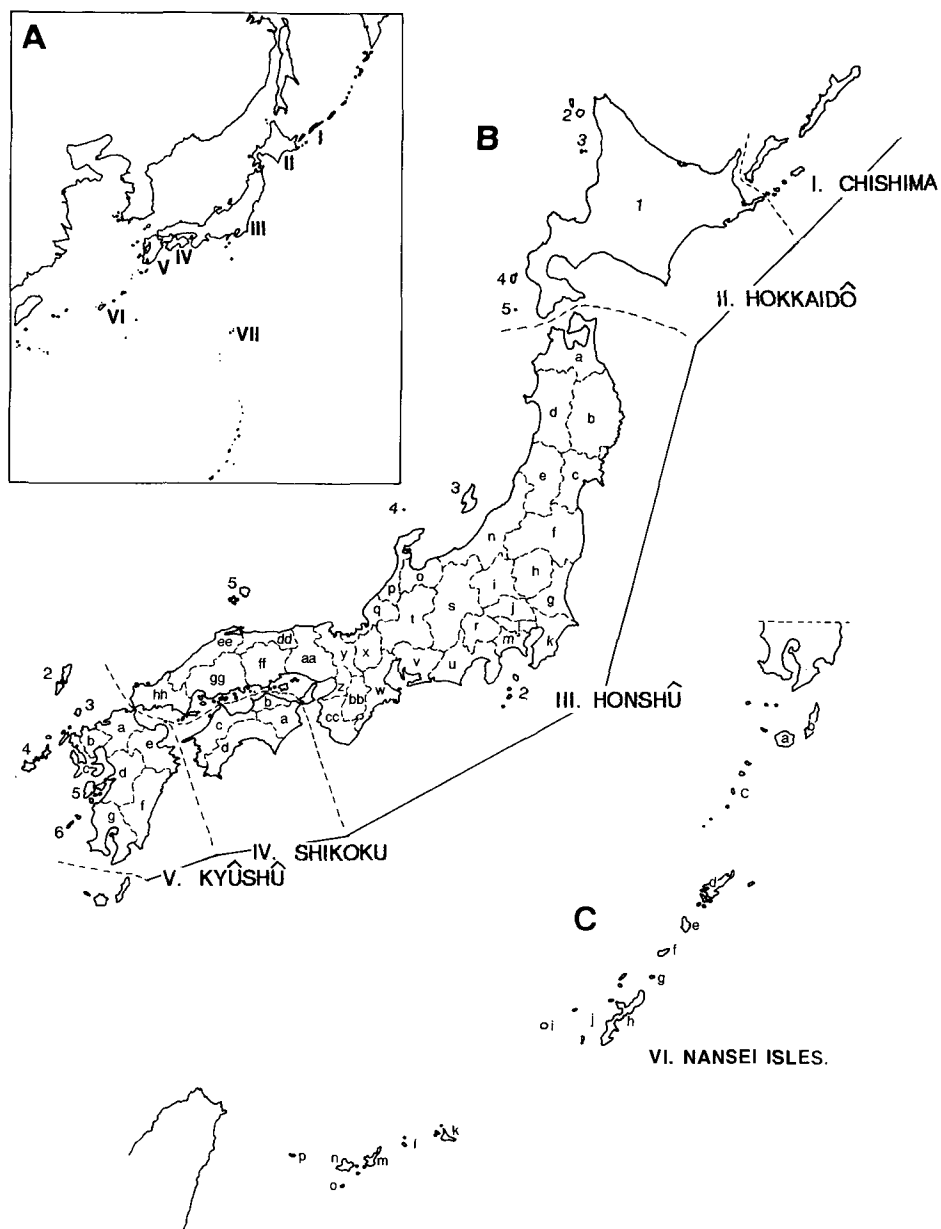


Fig. 1. A: Japan and adjacent regions. B: Japanese mainland and some associated islands. C: Nansei Islands. For symbols see Table 1.

Table 1. Names of islands and regions in Japan under investigation. See Fig. 1.

No.	Main islands (put in brackets [] in Specimens examined).	Main islands are divided into following islands or prefectures.
I	Chishima Isles	Etorofu Is., Kunashiri Is., Shikotan Is., Habomai Isles
II-1	Hokkaidô	proper
II-2		Rishiri Is., Rebun Is. (located close to Wakkanai)
II-3		Teuri Is., Yagishiri Is. (located close to Haboro)
II-4		Okushiri Is. (located close to Setana)
II-5		Oshima Isles (located close to Matsumae)
III-1-a	Honshû	Aomori-ken
III-1-b		Iwate-ken
III-1-c		Miyagi-ken Tōhoku district
III-1-d		Akita-ken
III-1-e		Yamagata-ken
III-1-f		Fukushima-ken
III-1-g		Ibaraki-ken
III-1-h		Tochigi-ken
III-1-i		Gumma-ken
III-1-j		Saitama-ken Kantō district
III-1-k		Chiba-ken
III-1-l		Tōkyō-to
III-1-m		Kanagawa-ken
III-1-n		Niigata-ken
III-1-o		Toyama-ken
III-1-p		Ishikawa-ken
III-1-q		Fukui-ken
III-1-r		Yamanashi-ken Chūbu district
III-1-s		Nagano-ken
III-1-t		Gifu-ken
III-1-u		Shizuoka-ken
III-1-v		Aichi-ken
III-1-w		Mie-ken
III-1-x		Shiga-ken
III-1-y		Kyōto-fu
III-1-z		Ōsaka-fu Kinki district
III-1-aa		Hyōgo-ken
III-1-bb		Nara-ken
III-1-cc		Wakayama-ken
III-1-dd		Tottori-ken
III-1-ee		Shimane-ken
III-1-ff		Okayama-ken Chūgoku district
III-1-gg		Hiroshima-ken
III-1-hh		Yamaguchi-ken
III-2		Izu Isles
III-3		Sado Is., Awa-jima Is.
III-4		Hegura Is.
III-5		Oki Isles
IV-1-a	Shikoku	Tokushima-ken
IV-1-b		Kagawa-ken
IV-1-c		Ehime-ken
IV-1-d		Kōchi-ken
V-1-a	Kyūshū	Fukuoka-ken
V-1-b		Saga-ken
V-1-c		Nagasaki-ken
V-1-d		Kumamoto-ken
V-1-e		Ōita-ken
V-1-f		Miyazaki-ken
V-1-g		Kagoshima-ken
V-2		Tsushima Is.
V-3		Iki Is.
V-4		Gotō Isles

Table 1. Continued.

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V-6		Koshiki Isles
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VI-1-b		Tane-ga-shima Is.
VI-1-c		Tokara Isles
VI-1-d		Amami-Ōshima Is.
VI-1-e		Tokuno-shima Is.
VI-1-f		Okinoerabu Is.
VI-1-g		Yoron Is.
VI-1-h		Okinawa-Hontō Is.
VI-1-i		Kume-jima Is.
VI-1-j		Kerama Isles
VI-1-k		Miyako Is.
VI-1-l		Tarama Is.
VI-1-m		Ishigaki Is.
VI-1-n		Iriomote Is.
VI-1-o		Hateruma Is.
VI-1-p		Yonaguni Is.
VII	Ogasawara Isles	Haha-jima Is., Chichi-jima Is.

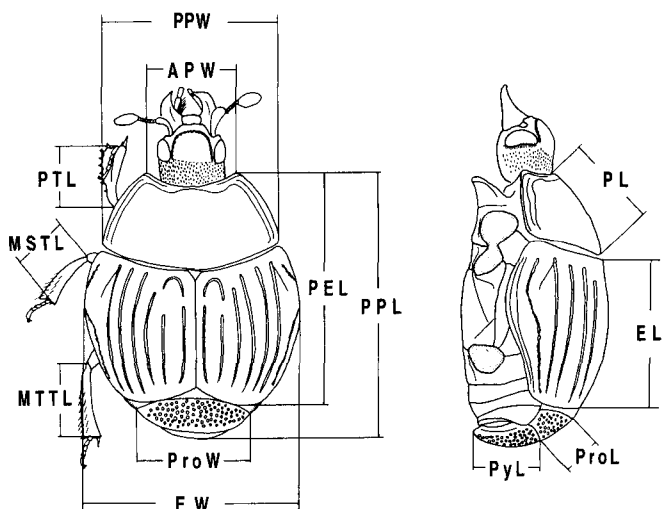


Fig. 2. Adult of the Histeridae in dorsal (left) and lateral (right) views, showing parts for biometric measurements.

- HW: width of head.
 APW: width between anterior angles of pronotum.
 PPW: width between posterior angles of pronotum.
 PL: length of pronotum along mid line.
 EL: length of elytron along sutural line.
 EW: maximal width between outer margins of elytra.
 ProW: maximal width of propygidium.
 ProL: length of propygidium.
 PyL: length of pygidium.
 PTL: length of protibia.
 MSTL: length of mesotibia.
 MTTL: length of metatibia.

Museum acronyms. Specimens were borrowed from the following institutions.

The people responsible for the loans are given after the names of the institutions. Specimens without acronyms are in my collection, now deposited in EIHU.

- BSM: Bishop Museum, Honolulu; G. A. Samuelson.
 EIHU: Entomological Institute (now Laboratory of Systematic Entomology), Hokkaidô University, Sapporo; M. Suwa.
 ELKU: Entomological Laboratory, Kyûshû University, Fukuoka; O. Tadauchi.
 HFFP: Hokkaidô Research Center, Forestry and Forest Products Research Institute; K. Maetô.
 HOR: Collection of Mr. S. Hori, Sapporo, Hokkaidô.
 IJ: Collection of Mr. K. Ijima, Shibecha, Hokkaidô.
 NA: Collection of Dr. T. Nakane, Chiba.
 NHM: Natural History Museum, London; E. De Boise.
 NSMT: Natural Science Museum, Tôkyô; S.-I. Uéno and A. Shinohara.
 TPM: Tochigi Prefectural Museum, Utsunomiya, Honshû; H. Higuchi and K. Satoh.

Survey areas. The present study covers the islands and regions shown in Table 1 and Figure 1. The Japanese suffixes -ken, -to, and -fu are applied to prefectures.

3. HISTORICAL REVIEW

CLASSIFICATION OF THE FAMILY HISTERIDAE

In the following lines main studies in the higher classification of the family Histeridae are summarized. Detailed reviews are found in Marseul (1857), Kryzhanovskij and Reichardt (1976), and Vienna (1980).

1758. LINNAEUS described the genus *Hister* for 6 new species.
 1811. PAYKULL proposed a new genus, *Hololepta*. He first classified the histerids into 2 genera, *Hister* and *Hololepta*.
 1817. LEACH added 4 genera, *Platysoma*, *Dendrophilus*, *Abraeus* and *Onthophilus*.
 1834. ERICHSON divided the family into 3 major groups, and 2 of them into 5 subgroups, as follows:

- I: *Hololepta*, *Phylloma*, *Oxysternus*
- II: A. a) *Plaesus*, *Placodes*, *Platysoma*, *Omalodes*, *Cypturus*
 b) *Hister*, *Hetaerius*, *Epierus*, *Tribarus*
 B. *Dendrophilus*, *Paromalus*
- III: A. *Saprinus*, *Pacylopus*, *Trypaneus*
 B. *Teretrius*, *Plaegaderus*, *Onthophilus*, *Abraeinae*

He used the following character states in the classification: 1. head retractile or not (II, III) (I); 2. prosternal lobe present or absent (II) (III); 3. club of antenna in repose is situated on anterior margin or on middle of surface (IIA) (IIB) of prosternum; 4. articulation of club of antenna is distinct on both ventral and dorsal sides or not distinct on one or both sides (a) (b); 5. antennae articulate on margin of front of head or on frontal disk (IIIA) (IIIB).

1854. LACORDAIRE recognized 2 tribes and 2 subtribes.

- I: Hololeptides
- II: Histerides
 - (i) Histerides
 - (ii) Saprinides

His system is based on the following character states: 1. head retractile or not (II) (I); 2. prosternum with prosternal lobe or without it (i) (ii).

1857. MARSEUL proposed a new classification of the family.

- I: Hololeptiens
- II: Trypanéens
- III: Histériens
- IV: Hétériens
- V: Saprinien
- VI: Abréens

His classification consisted of 6 tribes. He used the following character states to divide

the family into the tribes: 1. head retractile or not (I, II) (III, IV, V, VI); 2. mandible long or short (I) (II); 3. prosternal lobe present or not (III, IV) (V, VI); 4. articulation of club of antenna is distinct or not, and shape of the club is oval or cylindrical (III) (IV); 5. antennal fossette situated on disk or margin of prosternum, and antennal furrow of head present under the lateral margin of head or in an emargination on the anterior margin (V) (VI).

1899. GANGLBAUER almost agreed with Marseul (1857), but he did not distinguish between the Histerinae and the Hetaerinae and the latter was included in the former. He provided 4 tribes for European histerids, and did not mention the tribe Trypanacini.

1909. REITTER divided the family into 7 tribes.

I:	Hololeptini	V:	Hetaerinini
II:	Histerini	VI:	Sapriini
III:	Paromalini	VII:	Abraeini
IV:	Dendrophilini		

- 1916-17. BICKHARDT's classification:

I:	Hololeptinae	VIII:	Histerinae
II:	Trypanacinae		1. Tribalini
II:	Trypeticinae		2. Platysomini
IV:	Teretriinae		3. Histerini
V:	Abareinae		4. Exosternini
VI:	Saprininae	IX:	Hetaerinae
VII:	Dendrophilinae		1. Hetaeriomorphini
			2. Hetaeriini
			3. Chlamydopsini

1941. REICHARDT's classification was as follows:

I:	Niponiinae	V:	Saprininae
II:	Trypeticinae	VI:	Dendrophilinae
"II":	Trypanacinae	VII:	Hololeptinae
III:	Teretriinae	"VII":	Histerinae
IV:	Abraeinae	X:	Hetaerinae

In this work the Trypanacinae and the succeeding subfamilies were erroneously numbered. He provided a key to the 10 subfamilies, which is quite artificial and does not reflect his classification. In his "Klassifikation" (p. 346) the following notes are given: 1) the genus *Niponius* is a member of the family Histeridae, because the paramera of the male genitalia are free and similar to those of the Trypeticinae and Trypaecinae, representing a primitive condition [in my observation, however, the paramera of these taxa are not free]. 2) The retractile or non-retractile condition of the head has been traditionally regarded as a primarily important character state in the family, but Reichardt did not adopt this view. According to him, the retractile head originated independently in some groups, e. g., in *Spelaeacritus*, *Hololepta* and the Trypanacinae. The 1st genus is allied to the *Acritus*-group; *Hololepta* is related to the Histerinae (therefore, the subfamily Histerinae was placed next to the Hololeptinae; in fact, the male genitalia and the hind wing vein are very similar between them); the Trypanacinae are close to the Trypeticinae. 3) The Saprininae are a highly specialized group and allied to the Abraeinae and Dendrophilinae based on many characters (however, no detailed explanation was given by him).

1944. WENZEL proposed a new system, which remarkably differs from the traditional classification. He divided the Histeridae into 2 divisions, "Saprinomorphae" and "Histeromorphae", and changed the ranks of some taxa as follows: 1) The Hololeptinae (sensu Reichardt, 1941) were reduced to a tribe in the Histerinae. 2) The Chlamydopsinae were treated as a subfamily and placed next to the Abraeinae. 3) The Teretriinae (sensu Reichardt, 1941) were ranked as a tribe in the Abreinae. 4) The tribe Tribalini included in the Histerinae (Bickhardt, 1916) was risen in rank to the subfamily Tribalinae. His system has been adopted by most recent authors. See also Section 5 (Phylogeny) for a detailed discussion. His system is summarized as follows:

I:	Saprinomorphae	II:	Histeromorphae
	I: Chlamydopsinae	VII:	Dendrophilinae
	II: Abraeinae	VIII:	Tribalinae
	I: Abraeini	IX:	Histerinae

- | | | |
|------------------|---------------------|----------------|
| | 2: Plegaderini | 1: Histerini |
| | 3: Acritomorphini | 2: Omalodini |
| | 4: Acritini | 3: Platysomini |
| | 5: Teretriini | 4: Hololeptini |
| III: Niponiinae | | 5: Exosternini |
| IV: Trypanacinae | X: Hetaeriinae | |
| V: Trypeticinae | 1: Hetaeriomorphini | |
| VI: Sapriniinae | 2: Hetaeriini | |
1976. KRYZHANOVSKIJ and REICHARDT proposed a new taxon, the tribe Bacaniini.
1980. VIENNA elevated the Onthophilina (Thomson, 1862) to the subfamily rank.
1982. OLEXA proposed a new tribe, the Anapleini.
1984. MAZUR mainly followed Wenzel. See also under Section 5 (Phylogeny).
- | | |
|--------------------|---------------------|
| I: Sapriniomorphae | II: Histeriomorphae |
| I: Abraecinae | VII: Dendrophilinae |
| 1. Abraecini | 1. Dendrophilini |
| 2. Plegaderini | 2. Anapleini |
| 3. Acritomorphini | 3. Bacaniini |
| 4. Acritini | 4. Paromalini |
| 5. Teretriini | VIII: Onthophilinae |
| II: Niponiinae | IX: Tribalinae |
| III: Trypanacinae | X: Histerinae |
| IV: Trypeticinae | 1. Histerini |
| V: Sapriniinae | 2. Omalodini |
| VI: Chlamydopsinae | 3. Platysomatini |
| | 4. Hololeptini |
| | 5. Exosternini |
| | XI: Hetaeriinae |
1989. HELAVA. Tribes in the Hetaerinae were not discriminated.

JAPANESE HISTEROIDEA

1854. MARSEUL described a new species, *Hister japonicus*. +1+0=1*
1860. MOTSCHULSKY described a new species, *Hister japonus*, which was later synonymized under *Margarinotus striola*. +1+0=2
1873. MARSEUL described 7 new species, *Platysoma lewisi*, *P. lineicollis*, *Hister pirithous*, *H. depistor*, *Dendrophilus xavieri*, *Paromalus musculus* (= *Pachylomalus musculus*), and *Abraeus bonzicus* (= *Chaetabraeus bonzicus*), and newly recorded from Japan *H. jekeli* (= *Merohister jekeli*), *H. 14-striatus* (= *Atholus duodecimstriatus quatuordecimstriatus*), *H. punctulatus*, *H. cadaverinus* (= *Margarinotus weymari* or one of its allied species), *H. navus* (= *Margarinotus niponicus*), *Carcinops pumilio*, *Saprinus speciosus* (= *S. splendens*), *S. pecuinus*, *S. nitidulus* (= *S. planiusculus*), *S. siniae* and *Saprinus* (*Gnathonus*) *rotundatus*. +7+11=20
1877. REITTER described a new species, *Plegaderus marseuli*. +1+0=21
1878. HAROLD recorded a species, *Onthophilus striatus*. +0+1=22
1879. LEWIS described 4 new species, *Hister marginepunctatus*, *Hister simplicisternus*, *Bacanius niponicus*, and *Acritus komai*. +4+0=26
1882. LEWIS erected a new genus for a new species, *Syntelia histeroides*. +1+0=27
1884. LEWIS described 21 new species, *Hololepta depressa*, *H. parallela* (nec Sturm, 1868), *Platysoma pini*, *P. vagans*, *P. rasile*, *P. celatum*, *Hister aino* (= *Merohister aino*), *H. concolor*, *H. boleti*, *H. agnatus*, *H. sutus*, *Epielus lucus*, *Notodoma fungorum*, *Hetaerius gratus*, *H. optatus*, *Triballus semen*, *Triponaeus fagi*, *T. venator*, *Onthophilus flavicornis*, *O. silvae*, and *O. arboreus* (= *Epechinus arboreus*), and newly recorded *Hololepta amurensis*

* $\pm A \pm B = C$. +A: Number of new species described; -A: no. of sp. synonymized; +B: no. of sp. newly recorded; -B: no. of sp. deleted; C: sum.

	and <i>Onthophilus ostreatus</i> . <i>Onthophilus flavicornis</i> is, however, the same with <i>O. striatus</i> in Harold (1878).	+21(+2-1)=49
1885.	SCHMIDT described a new species, <i>Hister congener</i>	+1+0=50
1885.	LEWIS described a new species, <i>Pachylopus ripae</i>	+1+0=51
1885.	LEWIS described the new genus <i>Niponius</i> for 4 new species, <i>impressicollis</i> , <i>furcatus</i> , <i>obtusiceps</i> , and <i>osorioceps</i>	+4+0=55
1890.	SCHMIDT described <i>Saprinus lewisii</i> , <i>S. subaenus</i> , and <i>S. varians</i> . Later, they were transferred to <i>Hypocaccus</i>	+3+0=58
1892.	LEWIS described <i>Paromalus mendicus</i> , <i>P. viaticus</i> , <i>P. fujisanus</i> , <i>P. vernalis</i> , <i>P. tardipes</i> , <i>P. omineus</i> , <i>P. montivagus</i> , <i>Acritus shogunus</i> (= <i>A. homoeopathicus</i>), and <i>Abraeus mikado</i> , and recorded <i>Paromalus parallelepipedus</i> and <i>P. complanatus</i> ; the last was, however, corrected later by himself (see 1899).	+9+2=69
1893.	SCHMIDT transferred <i>Abraeus mikado</i> into the correct genus <i>Bacanius</i>	
1894.	LEWIS proposed a new name, <i>higoniae</i> , for his <i>Hololepta parallela</i>	
1895.	LEWIS described a new species, <i>Hister niponicus</i> , which was recorded as <i>H. navus</i> by Marseul (1873).	+1-1=69
1899.	LEWIS described 3 new species, <i>Platysoma satzuma</i> , <i>Hypocaccus ainu</i> , and <i>Paromalus niponensis</i> , the last for the misidentified <i>P. complanatus</i> in Lewis (1892), and synonymized <i>Hister japanus</i> under <i>H. striola</i>	+2+0=71
1904.	LEWIS transferred <i>Hister congener</i> into the new genus <i>Pachylister</i>	
1905.	LEWIS transferred <i>Tryponeus venator</i> and <i>fagi</i> into the correct genus <i>Trypeticus</i>	
1906.	LEWIS recorded a species, <i>Platysoma deplanatum</i>	+0+1=72
1906b.	LEWIS described a new species, <i>Platylister niponensis</i>	+1+0=73
1907.	LEWIS transferred <i>Paromalus parallelepipedus</i> , <i>P. omineus</i> , and <i>P. vernalis</i> into the new genus <i>Microlopalrus</i>	
1907c.	LEWIS described a new species, <i>Onthophilus niponensis</i>	+1+0=74
1911.	LEWIS described a new species, <i>Hypocaccus asticus</i>	+1+0=75
1914.	LEWIS described a new species, <i>Hister togoii</i>	+1+0=76
1918.	BICKHARDT treated <i>Hister aino</i> as a synonym of <i>jekeli</i>	+0-1=75
1920.	BICKHARDT treated <i>Hister togoii</i> as a synonym of <i>H. simplicisternus</i>	+0-1=74
1920b.	BICKHARDT treated <i>Platysoma niponensis</i> as a synonym of <i>P. cambodjense</i>	
1926.	REICHARDT transferred <i>Pachylopus ripae</i> into the new genus <i>Eopachylopus</i>	
1930.	ADACHI described a new species, <i>Onthophilus kamiyai</i>	+1+0=75
1941.	COOMAN described a new species, <i>Binhister chujoi</i>	+1+0=76
1944.	WENZEL described a new species, <i>Margarinotus weymarni</i> , which may be the same with <i>Hister cadaverinus</i> in Marseul (1873), and transferred <i>Hister agnatus</i> , <i>H. marginepunctatus</i> , <i>H. niponicus</i> , <i>H. sutus</i> , <i>H. striola</i> , and <i>H. boleti</i> into the new genus <i>Margarinotus</i>	+1-1=76
1948.	COOMAN described a new species, <i>Platysoma oberthuri</i> , and a new genus <i>Platylomalus</i> , and transferred <i>Paromalus mendicus</i> to it.	+1+0=77
1952.	ÔSAWA described a new species, <i>Hister impunctatus</i> and a new form, <i>rufofasciatus</i> , of <i>Eopachylopus ripae</i>	+1+0=78
1955.	CHÛJÔ described a new species, <i>Niponius itoi</i>	+1+0=79
1961.	NAKANE described a new species, <i>Anapleus japonicus</i>	+1+0=80
1962.	DAHLGREN described a new species, <i>Saprinus niponicus</i>	+1+0=81
1962.	ADACHI and OHNO newly recorded a species, <i>Spaherites politus</i>	+0+1=82
1963.	NAKANE newly recorded 2 species, <i>Peranus bimaculatus</i> and <i>Platysoma unicum</i>	+0+2=84
1964.	NAKANE transferred <i>Triballus semen</i> into the correct genus <i>Anapleus</i>	
1976.	KRYZHANOVSKIJ and REICHARDT described a new species, <i>Hypocaccus axeli</i> , transferred <i>Paromalus niponensis</i> , <i>P. fujisanus</i> , and <i>P. viaticus</i> into the correct genus <i>Platylomalus</i> , and newly recorded <i>Hister unicolor opimus</i> (= <i>leonhardi</i>).	+1+1=86
1977.	NAKANE described a new subspecies, <i>Hypocaccus varians hatsune</i> , and newly recorded <i>Saprinus auricollis</i> (= <i>S. cyaneus auricollis</i>) from Bonin Is.	+0+1=87
1981.	MAZUR described a new genus <i>Australomalus</i> , and transferred <i>Platylomalus montivagus</i> to it.	

1984.	MAZUR transferred <i>Paromalus persimilis</i> into the correct genus <i>Platylomalus</i> , and <i>Paromalus tardipes</i> into <i>Eulomalus</i> . <i>Anapleus japonicus</i> is synonymized under <i>A. semen</i>	+0-1=86
1984.	HISAMATSU and KUSUI newly recorded <i>Atholus coelestis</i>	+0+1=87
1984.	HISAMATSU newly recorded <i>Platylomalus persimilis</i>	+0+1=88
1984.	KUSUI recorded <i>Cylister elongatus</i> . Because this species is undoubtedly an introduced species, it is not counted as a member of the fauna.	
1985.	HISAMATSU described a new species, <i>Plegaderus shikokensis</i> , and newly recorded <i>Apobletes tener</i>	+1+1=90
1985b.	HISAMATSU newly recorded <i>Gnathoncus nannetensis</i> , <i>Eulomalus lombokanus</i> , <i>Platylister atratus</i> and <i>P. horni</i>	+0+4=94
1986.	ÔHARA revised the genus <i>Platysoma</i> from Japan, and added 2 new species, <i>takehikoi</i> and <i>tsushima</i>	+2+0=96
1986.	ÔHARA and NAKANE revised the genus <i>Onthophilus</i> from Japan, and added a new species, <i>aonoi</i> , and newly recorded <i>ordinatus</i>	+1+1=98
1987.	MAZUR synonymized <i>Acritus shogunus</i> under <i>Acritus (Pacnacritus) homoeopathicus</i> .	
1989.	ÔHARA and NAKANE redescribed 2 species of the tribe Exosternini, <i>Notodoma fungorum</i> and <i>Binhister chujoi</i> .	
1989.	ÔHARA reviewed the genus <i>Margarinotus</i> from Japan, described a new species, <i>M. (Ptomister) yezoensis</i> , and newly recorded 2 species, <i>cadavericola</i> and <i>reichardti</i> . <i>M. (P.) marginepunctatus</i> was transferred from subgenus <i>Promethister</i> to subgenus <i>Ptomister</i>	+1+2=101
1991.	ÔHARA revised the genus <i>Hololepta</i> from Japan.	
1992.	ÔHARA revised the genus <i>Merohister</i> from Japan, revitalized <i>aino</i> , and added a new species, <i>uenoi</i>	+1+1=103
1992c.	ÔHARA revised the genus <i>Atholus</i> from Japan.	
1993.	ÔHARA recorded a species, <i>Margarinotus (Kurilister) karbatovi</i>	+0+1=104
1994.	SAWADA described a new genus, <i>Boreochlamydus</i> , for a new species, <i>ohtanii</i>	+1+0=105
1994.	In this paper, I describe 6 new species, <i>Hypocaccus akanensis</i> , <i>Anapleus nakanei</i> , <i>A. nomurai</i> , <i>A. hagai</i> , <i>Platylomalus kusuii</i> , <i>Epierus uenoi</i> , and newly record from Japan <i>Chaetabraeus cohaeres</i> and <i>Gnathoncus communis</i> . I transfer <i>Boreochlamydus ohtanii</i> to the genus <i>Eucritopsis</i>	+6+2=113
In conclusion, 113 species of the Histeroidea are now known to occur in Japan.		

4. MORPHOLOGY AND TERMS

Because of the diversity in external structure of Coleoptera, descriptive terms often need to be clarified for each superfamily, family, or even lower category under study. In the Histeroidea, many papers in English published after 1950 follow the style and descriptive terms in Wenzel and Dybas (1941). The present paper also mainly follows Wenzel and Dybas's system of terms and Naomi (1987 – 1990). Most of the terms used are illustrated in Figure 3.

HEAD

No detailed comparative morphological study of the head has been made for members of the superfamily Histeroidea. Because in dried specimen the head is usually retracted in the prothorax, many past authors, except Marseul (1853 – 1862), did not describe the details of the head sutures and mouthparts, which are observable on the ventral side.

In this section the head sutures and various parts of the cranium are dealt with.

Situation and general appearance of head

Head is generally prognathous in the Coleoptera. In the families Sphaeritidae and Synteliidae and the subfamily Niponiinae of the Histeridae, the head is prognathous as in many other Coleoptera. But in other Histeridae the head is almost deflexed except in several members (e. g., Trypanaeinae and *Hololepta*). Usually the posterior 1/2 of the head retracts into the anterior margin of the pronotum. The prognathous state in the several members is probably secondary in association with a changed living style.

Head in dorsal view is short, broad, convex, and oval or oblong-oval in general. In *Trypeticus* (Fig. 5E, F) the head shows a triangular shape in dorsal view, the lateral margins being convergent apically. In the majority of Histeridae, the anterior 1/2 of the head is generally narrowed to form the frontoclypeal region.

Head is usually narrower than the prothorax except in the Synteliidae and *Niponius*, in which the head is as broad as the prothorax.

Head suture (Fig. 4 – 6)

In the Histeroidea, the following sutures are observed on the head (Fig. 4A, B): frontoclypeal, hypostomal, occipital and postoccipital sutures; midcarinal suture (cornal suture of Blackwelder, 1936) absent.

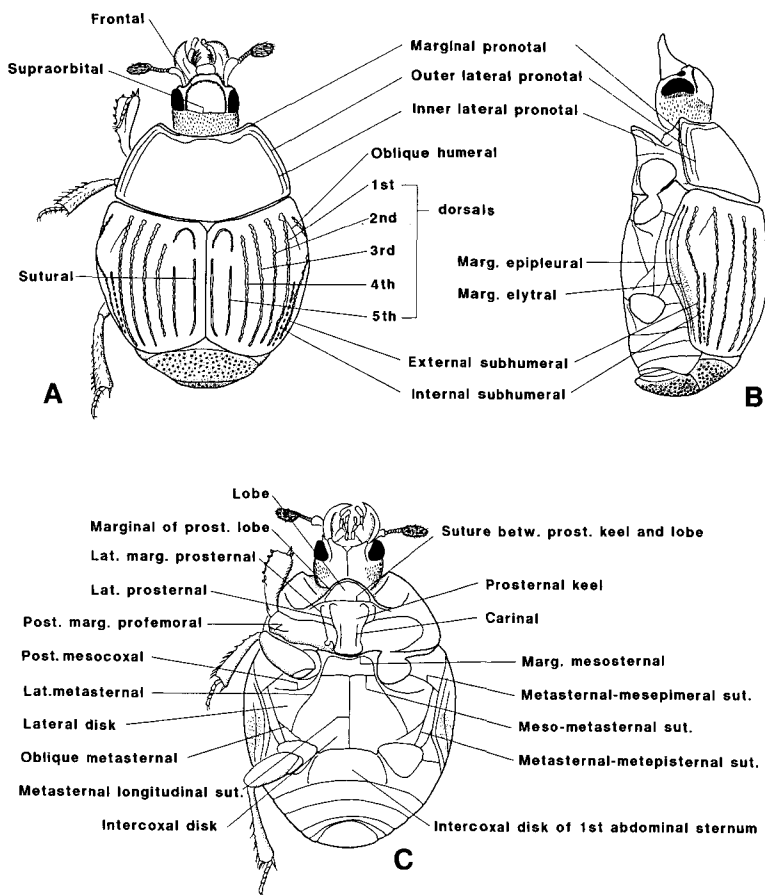


Fig. 3. A histerid beetle, *Margarinotus*, showing terms of some striae and parts. A: Dorsal view. B: Lateral view. C: Ventral view (after Ôhara, 1989).

Frontoclypeal suture (clypeofrontal suture in Cook, 1943): This suture runs arcuately between the anterior tentorial pits in Coleoptera, but the pits are obscure in the Histeroidea. The suture is present only in the Sphaeritidae; in *Shpaerites* the suture is very distinct and gently arcuate (Fig. 4C).

Occipital suture (infraorbital ridge of Smetana, 1971; premandibular suture of Cook, 1943): This suture crosses dorsally the hind part of the head, continues to the ventral side and terminates on each side anteriorly to the posterior articulation of the mandible; it demarcates the vertex from the occipital region in generalized Coleoptera, for example, a group of Adephaga (Cook, 1943) and the Staphilinidae (Naomi, 1987). In the Histeroidea, the suture is lost in the majority, and is found only in *Epielus* as a short one along the posterior margin of each eye (Fig. 6D).

Hypostomal and postoccipital sutures: The hypostomal and postoccipital sutures are united with each other at the posterior tentorial pit to form a line in general Coleoptera. In the Histeroidea, however, it is usually difficult to discriminate between the 2 sutures, because the pit is absent in major groups and obscure in *Spaerites* and *Syntelia* (Fig. 4D, G). Part of the postoccipital suture between the gula and postgena is usually called "gular suture".

The hypostomal suture is distinct and found in the majority of the Histeroidea.

The gular sutures are variable in the Histeroidea: sometimes they are separated, running parallel to each other, but in other species they are fused partly or even completely to form a straight line. See also under Gula plate.

The postoccipital suture between the postocciput and postgena is variable in the Histeroidea, and is discussed under Postocciput.

Eyes and ocelli (Fig. 4 – 6)

The eyes are present in a pair and located laterally in general. They are usually well developed and oblong, the posterior margin is often inwardly arcuate. They are usually kidney-shaped or round in lateral view.

The eyes are, however, lost in a cave-inhabiting species, *Geocollus caecus* Wenzel.

The ocelli are absent in the Histeroidea.

Cranium (Fig. 4 – 6)

Cranium is usually composed of the frontoclypeal region, vertex, postgena, ventral plate of the parietals, postocciput and gula in the Histeroidea.

Frontoclypeal region: In the majority of the Histeroidea, the region is nearly square, its lateral margins being often gradually convergent apically, or parallel. This is not true of the Histerinae (Fig. 6F, I) and Paromalini (Fig. 5C), in which the region is short with the anterior margin gently arcuate.

Epicranial modification: Epicranium is usually weakly convex or subflat. In the Niponiinae, there are projected structures in a pair, which are well developed and corrugated (Fig. 42A, 43A, 45A, 46A). Hornlike structure is developed in some species of the subfamily Tribalinae. The majority of the Onthophilinae have costae.

Frontal and supraorbital striae on the disk of epicanium are useful characters for classifying the Histeroidea. The frontal stria usually appears in the Saprininae, Trypeticinae, Dendrophilinae, and Histerinae; it is variable from a feebly impressed to a deep one, often interrupted at anterior middle or latero-apical angles, and also from a

gently arcuate to a hexagonal line. The supraorbital stria is found in the Sapriniinae (Fig. 5G). The posterior end of the frontal and the lateral end of the supraorbital are usually united with each other.

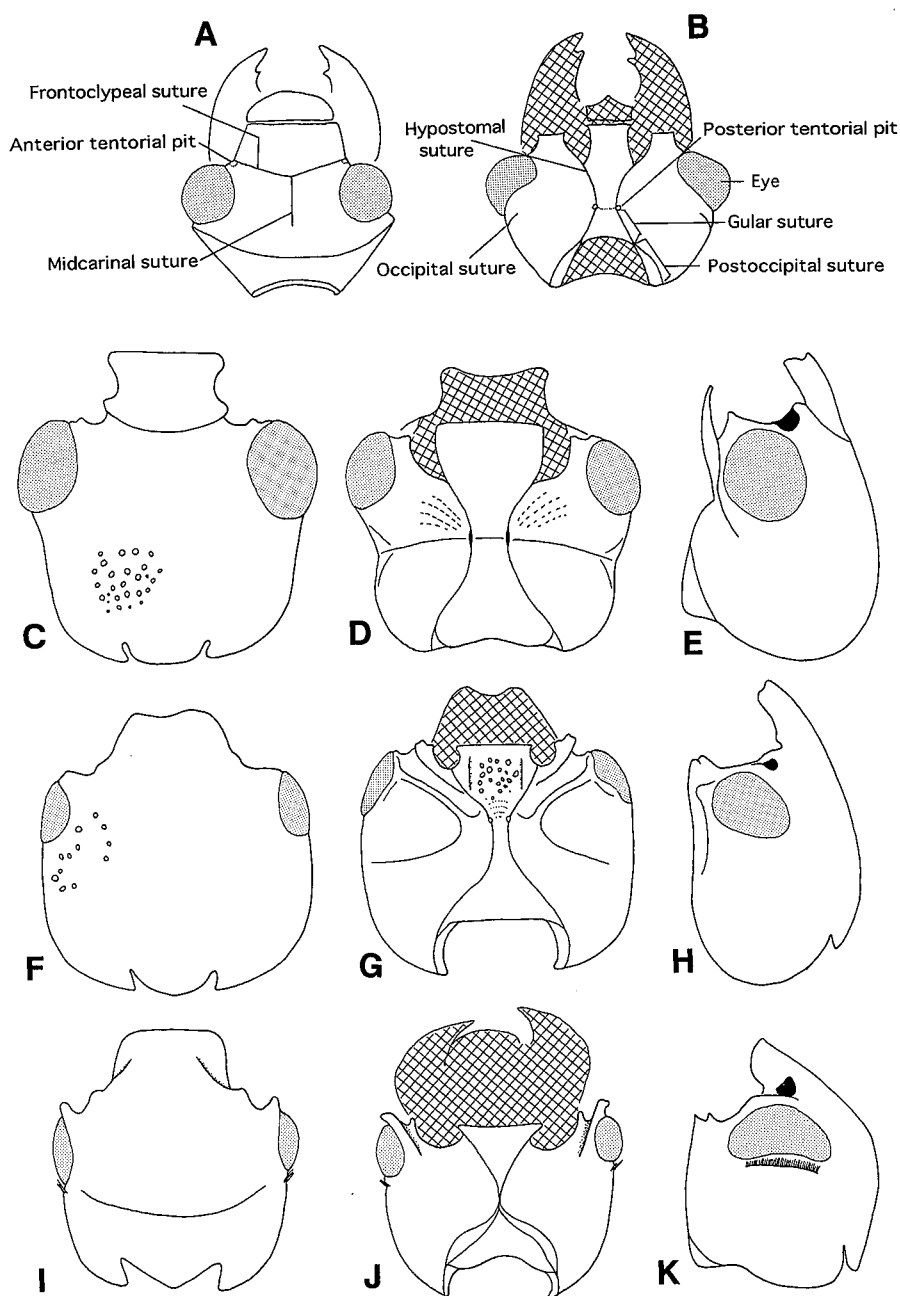


Fig. 4. Head. A, B: Schematic. C, D, E: *Sphaerites politus* (Sphaeritidae). F, G, H: *Syntelia histeroides* (Synteliidae). I, J, K: *Dendrophilus xavieri*. A, C, F, I: dorsal view. B, D, G, J: ventral view. E, H, K: lateral view, left side.

Occiput: Occiput is equal to the so-called "neck" in Coleoptera. In the Histeroidea the occipital constriction is absent. Only in *Trypeticus* the portion is separated by a distinct ridge (Fig. 5E, F).

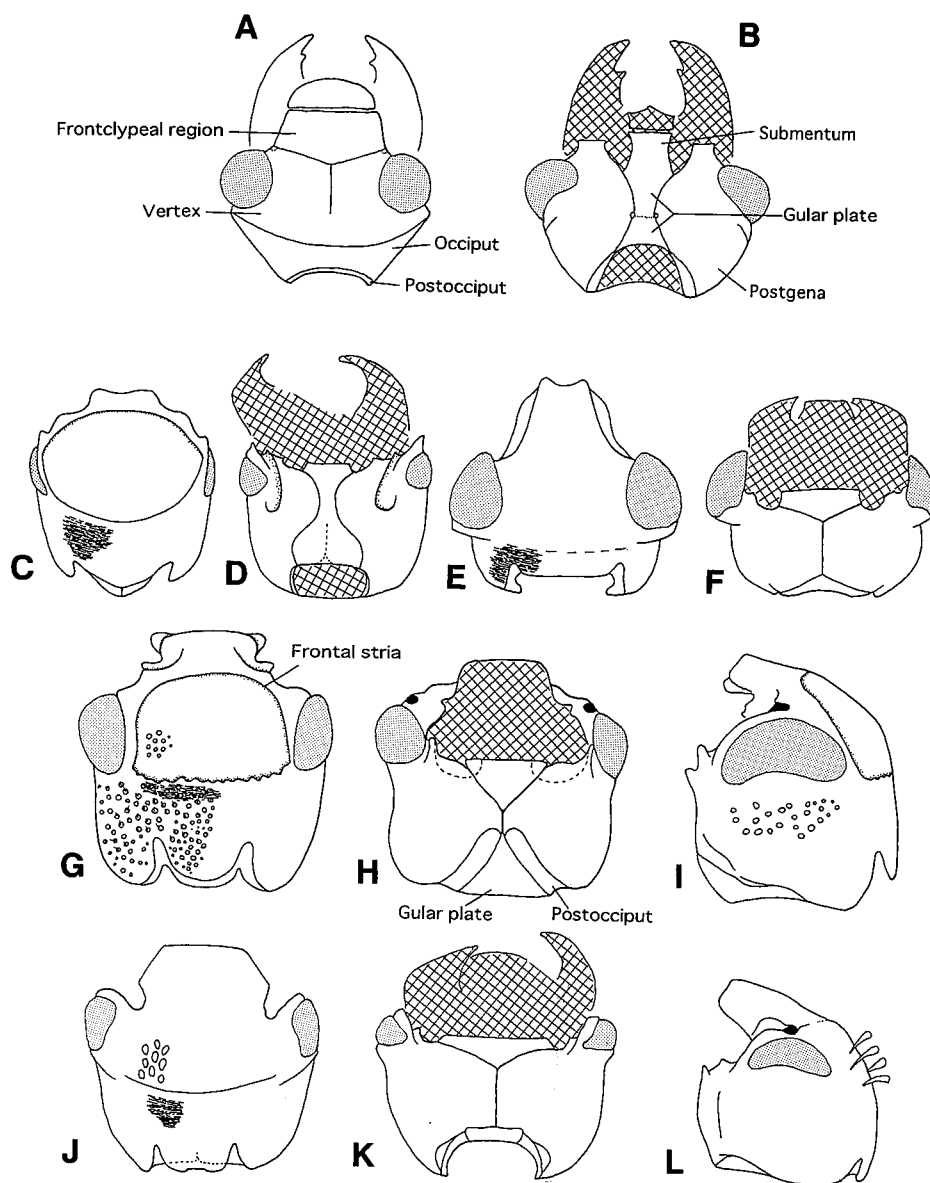


Fig. 5. Head. A, B: Schematic. C, D: *Pachylomalus* sp. (Paromalini, Dendrophilinae, Histeridae). E, F: *Trypeticus fagi* (Trypeticinae, Histeridae). G, H, I: *Saprinus splendens* (Saprininae, Histeridae). J, K, L: *Chaetabraeus bonzicus* (Abraeinae, Histeridae). A, C, E, G, J: dorsal view. B, D, F, H, K: ventral view. I, L: lateral view, left side.

Ventral plates consisting of postgenae and ventral parts of parietals: The postgena and ventral part of the parietal on one side are usually fused into a plate because of the absence of the occipital suture. The plate is weakly convex or flat, usually with small or large punctures. However, a modified structure, known as antennal furrow, is found in major groups.

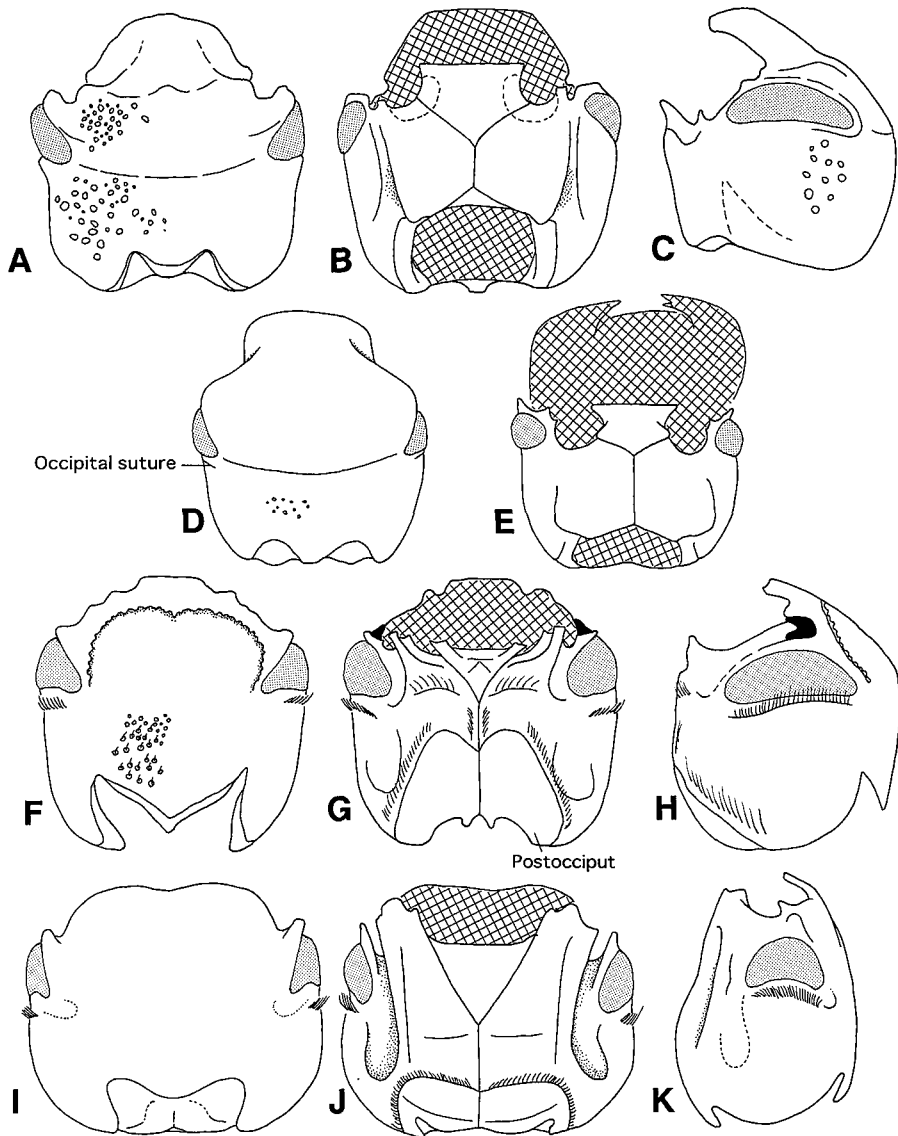


Fig. 6. Head. A, B, C: *Onthophilus ostreatus* (Onthophilinae, Histeridae). D, E: *Epierus comptus* (Tribarinae, Histeridae). F, G, H: *Merohister jekeli* (Histerini, Histerinae, Histeridae). I, J, K: *Hololepta amurensis* (Hololeptini, Histerinae, Histeridae). A, D, F, I: dorsal view. B, E, G, J: ventral view. C, H, K: lateral view, left side.

Antennal furrows on the ventral plates are developed in the following groups: *Syntelia*, *Pachylomalus*, *Onthophilus*, *Hololepta* (Fig. 4G, 5D, 6B, J) and *Niponius* (Fig. 42B, 43B, 45B, 46B); in the last taxon they are deeply foveate.

Gular plate: Gula is a median ventral plate of the head behind the posterior tentorial pit, but it is not separated from the submentum by a suture. In the Histeroidea, the gula is important for phylogenetic study, and is classified into the following types on the basis of the shape.

1. Gula is trapezoid. The gular sutures are distinct in a pair, not fused with each other, and are convergent apically.
2. Gula is a small triangular plate. The gular sutures are fused on anterior part.
3. Gula is reduced, being represented by a tiny triangular or transverse quadrangular plate. The gular sutures are almost fused with each other, and form a straight line.
4. Gula is absent. The gular sutures are completely fused, forming a straight line.

The 1st type is the most primitive state and is found in the Spheritidae, Synteliidae and *Pachylomalus* (Fig. 4D, G, 5D). The 2nd is present in the Dendrophilinae and Sapriniinae (Fig. 4J, 5H). The 3rd is found in the Trypeticinae, Onthophilinae and Abraeinae (Fig. 5F, L, 6B). The last type is the most derived state and is found in the Tribalinae and Histerinae (Fig. 6E, G, J). It is difficult to determine which of the 2nd and 3rd is more primitive.

Postocciput: Postocciput is a ring-shaped structure of the cranium and is usually reddish or yellowish brown. It is situated behind occiput and separated from the latter by the postoccipital suture.

The postocciput is very important for phylogenetic study in the Histeroidea. In the most primitive state the postocciput is represented by a narrow and small plate, and is situated along the lateral margin of the cavity. This state is found in the majority of the Histeroidea. In the Sapriniinae, the plate is elongate anteriorly along the gular suture, and is moderately narrow (Fig. 5H). In the Histerinae, the postocciput is enlarged on basal 1/2 of the ventral plate (Fig. 6G, J). This is the most derived state.

Antennae (Fig. 7 – 8)

Antennae are clavate and composed of the scape, pedicel and flagellum. The base of the antenna is attached to the ventral side of the anterolateral margin of the forehead near the eye. Segments are numbered 11, except in *Trypeticus*, of which the antenna is 10-segmented (Fig. 7H). Scape is robust and geniculately connected with the pedicel. In the Hetaeriinae and the Chlamydopsinae, the scape is expanded and strongly angulate. Pedicel is usually short, small, and is usually narrower than the scape, but sometimes it is oval and broader in the Sapriniinae and Trypeticinae (Fig. 7H, 8A). Flagellum is composed of the 3rd – 11th segments of the antenna. In *Trypeticus*, it is the 3rd – 10th. In the Histeroidea, the apical 3 (usually 9th – 11th) segments are comprised in a "club" and the rest are called "funicle". The club is usually oval, condensed and more or less densely covered with hairs; rarely it is cylindrical in the Hetaeriinae. In the Sapriniinae, the club is with "Reichardt's organ" (De Marzo and Vienna, 1982a, b) on the ventral surface, which is a particular sense apparatus (Fig. 7I, 8A). The articulation of the club is variable from a complete to an obscure one. The apicalmost segment of the funicle is usually expanded laterally to form a fringe.

Mouthparts (Fig. 9)

The mouthparts are composed of labrum, mandibles, maxillae, labium and their appendages. In the Histeroidea, the morphology of the mouthparts has not been sufficiently studied. My comparative studies are still incomplete. Here, I describe their morphologies based only on 2 species, *Notodoma fungorum* and *Hololepta amurensis*.

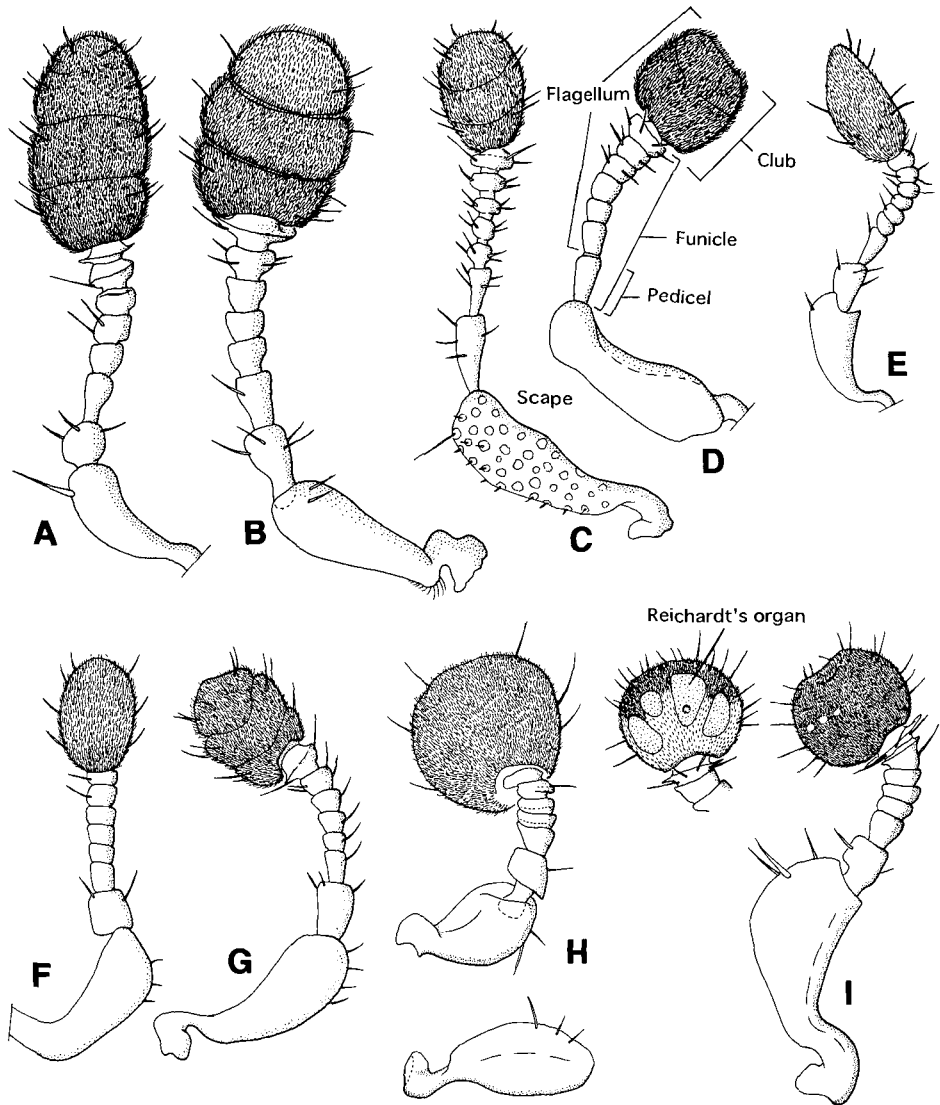


Fig. 7. Antennae. A: *Sphaerites politus* (Sphaeritidae). B: *Syntelia histeroides* (Synteliidae). C: *Onthophilus ostreatus* (Onthophilinae, Histeridae). D: *Epierus comptus* (Tribarinae, Histeridae). E: *Chaetabraeus bonzicus* (Abraeinae, Histeridae). F: *Plegaderus marseuli* (Abraeinae, Histeridae). G: *Dendrophilus xavieri* (Dendrophilinae, Histeridae). H: *Trypeticus fagi* (Trypeticinae, Histeridae). I: *Saprinus splendens* (Saprininae, Histeridae).

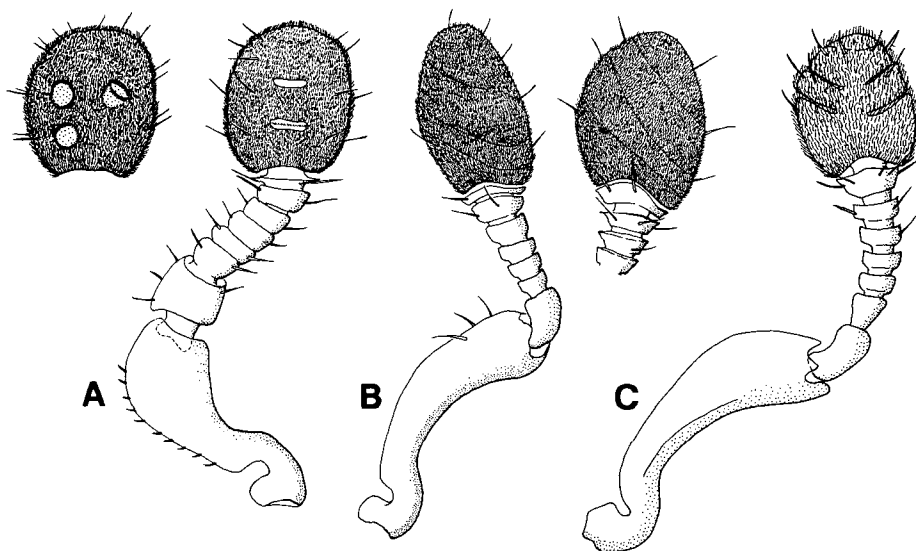


Fig. 8. Antennae. A: *Gnathoncus nannetensis* (Saprininae, Histeridae). B: *Hister concolor* (Histerini, Histerinae, Histeridae). C: *Platysoma vagans* (Platysomatini, Histerinae, Histeridae).

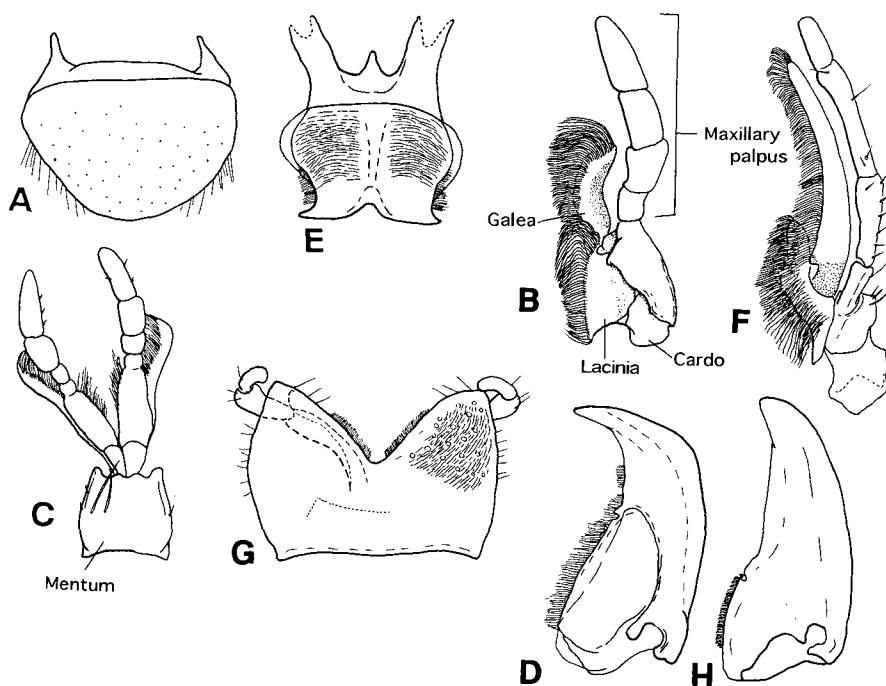


Fig. 9. Mouthparts. A – D: *Notodoma fungorum* (Exosternini, Histerinae). E – H: *Hololepta amurensis* (Hololeptini, Histerinae). A, E: Labrum. B, F: Maxilla. C, G: Labium. D, H: Right mandible, dorsal view.

Labrum (Fig. 9A, E) is an unpaired plate, situated before the clypeus and is separated from the latter by a distinct suture at the adult stage. It is transverse oblong, and the anterior margin is arcuate in *Notodoma*. The anterior margin is emarginate at middle and the lateral margins are also emarginate anteriorly in *Hololepta*. The lateral margin is furnished with hairs. In the Histerinae the surface of the labrum is not setiferous, while with a pair of setae in the Synteliidae, Sphaeritidae and other Histeridae.

Mandibles (Fig. 9D, H) are in a pair and well developed in the Histeroidea. The inner margin is usually provided with denticles. In *Notodoma* and *Hololepta*, there is no denticle.

Maxillae (Fig. 9B, F) consist of cardines, stipites, palpifers, laciniae, subgaleae, galeae and palpi all in pairs. The palpus is 4-segmented, but may appear 3-segmented because of the minute 1st segment. The galea is long in *Hololepta*.

Labium (Fig. 9C, G) is composed of the submentum, mentum, prementum, ligula and a pair of labial palpi. Mentum is nearly rectangular in *Notodoma*, while in *Hololepta* the anterior margin is strongly and acutely emarginate. Labial palpus consists of 3 segments.

THORAX

Cervix

The cervical elements are much reduced and composed of 2 pairs of lateral sclerites in the Histeroidea. They are situated ventrolaterally on the membrane between the cranium and the prothorax. The 1st (basal) sclerite is connected with the side of the anterior margin of the composite ventral plate of the prothorax by membrane. It is small, longitudinal oblong or triangular. The 2nd (apical) sclerite is much longer than the 1st.

Prothorax (Fig. 10 – 12)

The prothorax is divided into pronotum and prosternum, forming dorsal and ventral plates. The lateral side of pronotum is inflexed ventrally. The inflexed part is separated from the dorsal part of the pronotum by a distinct notohypomeral ridge or suture. Elements of the tergum of the prothorax are completely fused to form a well-sclerotized plate. Line of demarcation between the hypomeron and the composite ventral plate is tentatively called "tergopleural suture" (Naomi, 1988). The presternum is present in about 1/2 members of the Histeroidea, and is called "prosternal lobe". The furcasternum is a pair of semiglobulate plates, but difficult to observe in normal condition, forming the anterior wall or bottom of the fore coxal cavity which is concealed under the fore coxa.

General shape and modifications of pronotum: The pronotum is nearly rectangular, usually transverse and broadest near the base, usually its sides being convergent apically. The anterior foramen is small, but that of *Syntelia* is larger than the posterior foramen (Fig. 10C). The posterior margin of the pronotum is obtusely angulate at middle or gently arcuate. The surface is often punctate, striate, and/or costate.

The following modifications are observed on the pronotum in the Histeroidea. The pronotal sides are convergent basally in *Syntelia* (Fig. 10C). The pronotum is subquadrangular in shape in the Niponiinae (Fig. 45D), Trypeticinae (Fig. 12F) and

Plegaderini (Fig. 11H). It is impressed by a marginal pronotal stria which runs along the notohypomeroal ridge and anterior margin in all Histeroidea. In *Plegaderus* (Fig. 124A), a transverse stria and longitudinal striae are present near the middle and on lateral 1/3, respectively. There are other striae, an outer lateral pronotal stria and an inner lateral pronotal stria, in the subfamily Histerinae. The former is usually represented only on lateral portion, while the latter is complete on lateral and anterior portion except for an interruption behind the head. One – 4 pairs of costae are present on the pronotum in *Onthophilus*. A transverse stria is found along the posterior margin of the pronotum in *Bacanius*, *Australomalus* (Fig. 83A) and *Acritus*. A pair of longitudinal impressions is present on medioposterior area in *Pachylomalus* (Fig. 101A).

Punctuation of the pronotum is very various in the Histeroidea. The pronotum is shining and smooth in some species of *Hister*, *Margarinotus*, *Hypocaccus* and so on. In most species of the Histeroidea, the punctuation covers the whole surface of the pronotum, the punctures being fine to coarse, and dense to sparse, sometimes in various combinations. The punctuation is often coarser and denser on the lateral region in *Atholus*, *Merohister*, some *Hypocaccus*, etc. A pair of large foveae are present on the lateromedian sides in *Niponius impressicollis* (Fig. 43D, E).

Hypomera: The hypomeron is strongly inflexed ventrally and extends from the anterior to the posterior margin of the pronotum. The posterior 1/3 of inner margin usually strongly projects mesially. The apex of the projection is united with the posterior apex of the furcasternum in *Syntelia* (Fig. 10C). In all other members of the Histeroidea its apex is pointed and not united with the furcasternum. The notohypomeroal ridge is distinct in all groups. The tergopleural suture is distinct in the majority of the Histeroidea, but is indistinct or completely lost in *Trypeticus* (Fig. 12F). In *Onthophilus* (Fig. 10G), the apical 1/3 of the hypomeron is provided with an antennal cavity which is at least partly closed beneath by lateral region of composed ventral plate (prosternal alae).

Presternum: A transverse triangular, subquadrangular, or semicircular plate is present just before the composite ventral plate in the Synteliidae, Tribarinae, Onthophilinae, Histerinae, and Dendrophilinae. It is called "prosternal lobe" and distinctly separated from the composite ventral plate by a suture between prosternal keel and lobe. In other histeroids the presternum is reduced. The presternum is triangular and strongly acute in *Syntelia* (Fig. 10C). There is a semicircular or obtuse triangular plate in the Histerinae, Dendrophilinae, and Tribalinae. In the Onthophilinae (Fig. 10G), it is not projected anteriorly, being transverse quadrangular. Presternum is usually impressed along the anterior margin by a marginal stria of prosternal lobe.

Composite ventral plate: The composite ventral plate is usually transverse and about 1/3 as long as wide. It is very variable in shape in the Histeridae and useful and important for phylogenetic study as shown below:

1. Plate flat, the median portion weakly convex. The medioposterior portion is projected as a narrow intercoxal process. This state may be the most primitive and is observed in *Sphaerites* (Fig. 10E).
2. Plate flat, the median portion weakly convex. The medioposterior portion is projected, but not produced as a process, being concealed under the fore coxae. This state may be 2nd primitive and is observed in *Syntelia* (Fig. 10C).
3. The median portion of the plate is elevated as a broad process, while the medioposterior portion is represented by the intercoxal process (prosternal keel

or process). The anterior margin of the plate is not produced into the antennal cavity on each side. The medio-apical portion of the plate is connected with the presternum, and the anterior margin of the united plate (presternum + composite ventral plate) is nearly straight. This state is observed in the Niponiinae (Fig. 42C, 43F, 45E, 46F).

4. As in 3, but the anterior margin of the plate is produced into the antennal cavity on each lateral portion. The cavity is a transverse fovea, of which the posterior

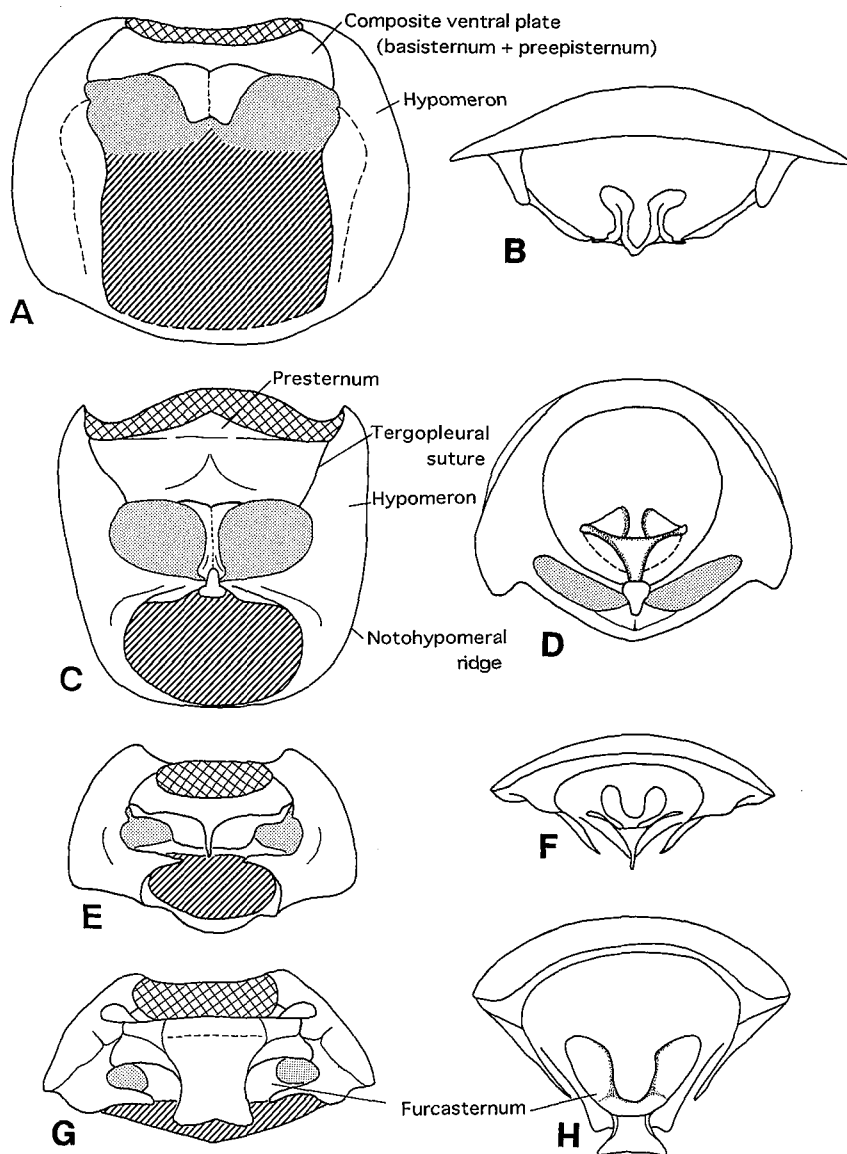


Fig. 10 Prothorax. A, B: *Necrodes asiaticus* (Silphidae). C, D: *Syntelia histeroidea* (Synteliidae). E, F: *Sphaerites politus* (Sphaeritidae). G, H: *Onthophilus ostreatus* (Onthophilinae, Histeridae). A, C, E, G: ventral view. B, D, F, H: caudal view.

ridge is formed by an obliquely running anterior margin of the presternum, and at least partly closed beneath by the presternum or the anterior margin of the composite ventral plate (prosternal alae). This state is observed in the Tribarinae

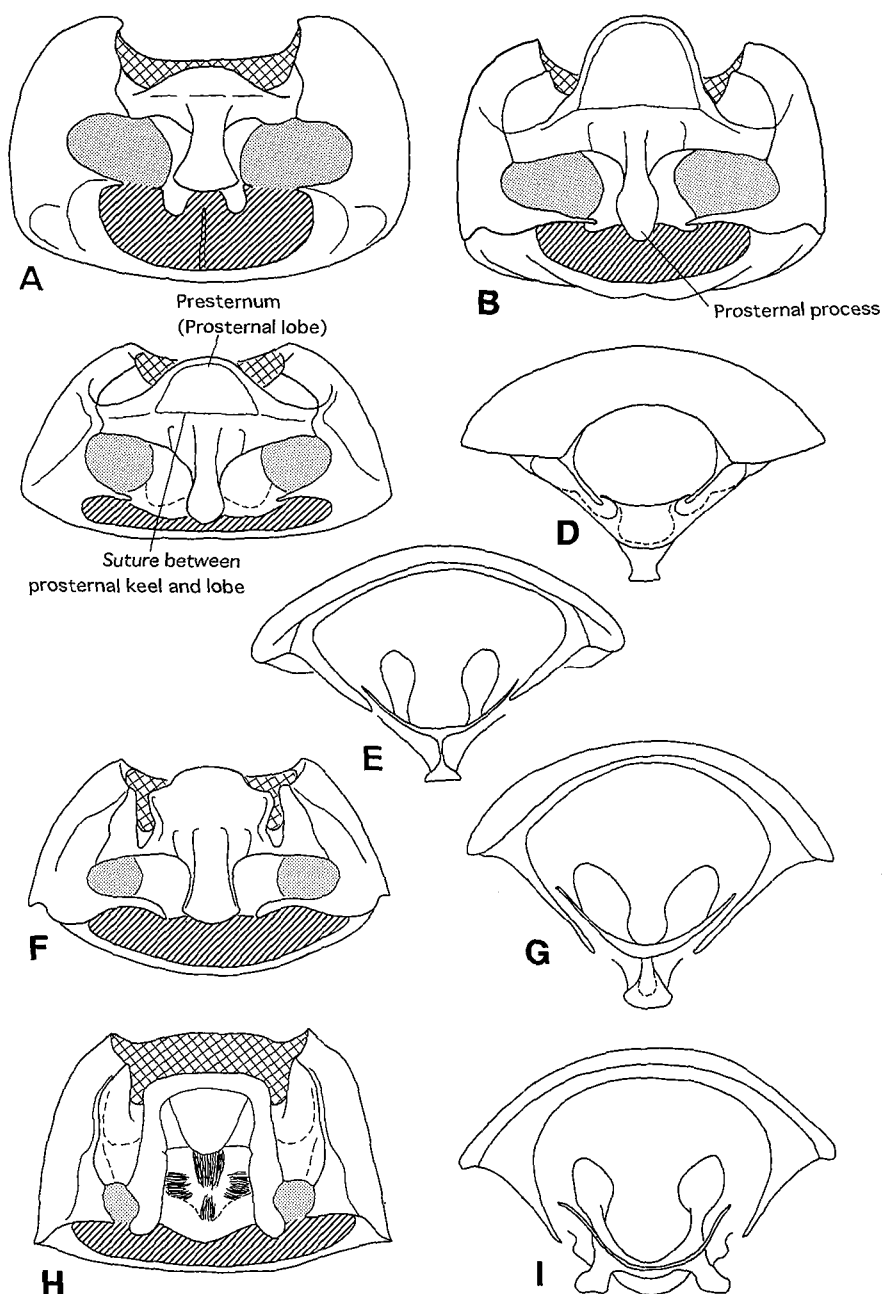


Fig. 11. Prothorax. A: *Hololepta amurensis* (Hololeptini, Histerinae). B: *Plaesus* sp. (Platysomatini, Histerinae). C, D, E: *Margarinotus cadavericola* (Histerini, Histerinae). F, G: *Dendrophilus xavieri* (Dendrophilini, Dendrophilinae). H, I: *Plegaderus marseuli* (Plegaderini, Abraecinae). A, B, C, F, H: ventral view. D: frontal view. E, G, I: caudal view.

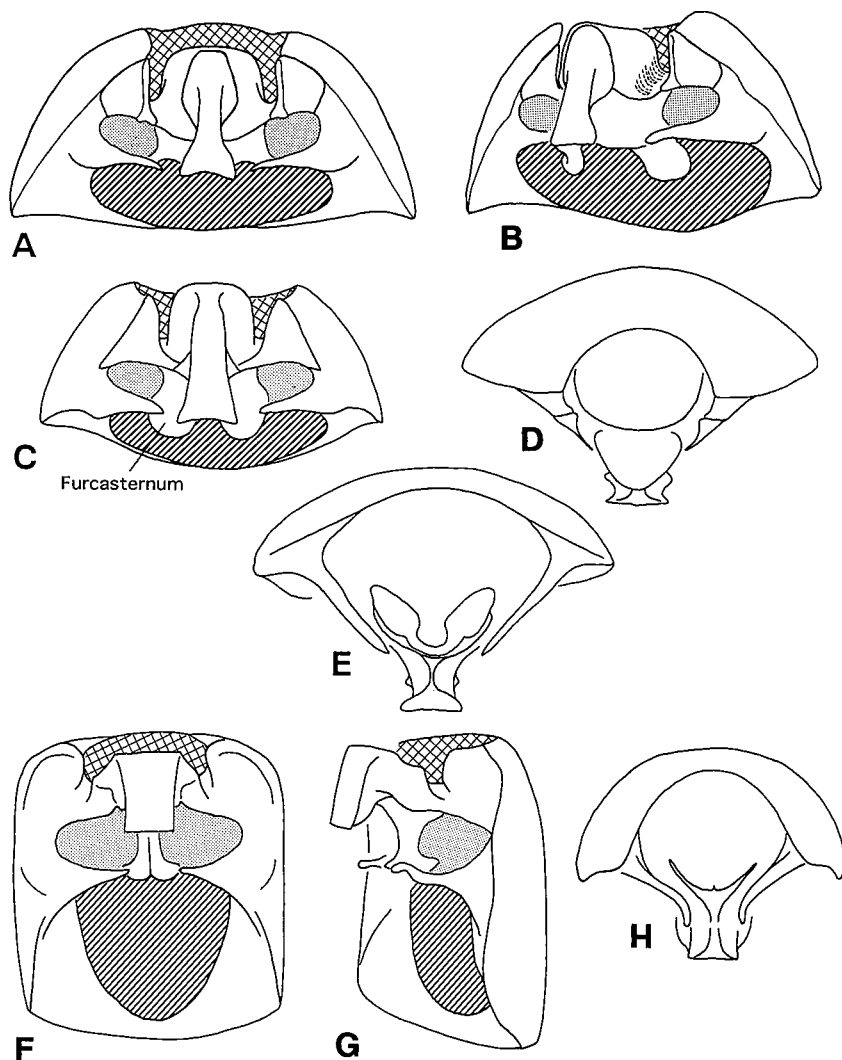


Fig. 12. Prothorax. A, B: *Saprinus splendens* (Saprininae). C, D, E: *Gnathoncus nannetensis* (Saprininae). F, G, H: *Trypeticus fagi* (Trypeticinae). A, C, F: ventral view. B, G: oblique view. D: frontal view. E, H: caudal view.

and Histerinae (Fig. 11A, B, C).

5. Similar to the preceding type, but the anterior cavities are very deep and connected with foveae of the hypomeron. In this state, the lateral margin of the plate is deeply interrupted transversely on each side by the cavity. This state is observed in *Onthophilus* (Fig. 10G).
6. The median portion of the plate is elevated as a broad process, and the basal portion is represented by the intercoxal process. The anterior margin of the plate is produced to form the antennal cavity on each lateral portion. The cavity is situated in front of the procoxa, and is represented by a longitudinal deep

furrow, of which the inner ridge is strongly costate and formed by a longitudinally running anterior margin of the presternum. This state is observed in the Dendrophilinae (Fig. 11F).

7. Very similar to the 6th type. The median portion of the plate is strongly elevated as a process or a narrow keel. The presternum is absent. This state is observed in the Sapriniinae (Fig. 12A, C), Trypeticinae (Fig. 12F) and Abraeinae (Fig. 12H).

A pair of striae called lateral marginal prosternal striae are present on the basal 1/2 of the median area of the composite ventral plate along the median elevated process. The intercoxal process (prosternal process or keel) is often impressed by a pair of carinal striae.

Furcasternum: The furcasternum is longitudinal and narrow in *Syntelia*, the basal apex being united with the projection of hypomeron. In *Sphaerites*, it is transverse and broad. In Histeridae, the furcasternum forms the anterior wall of the fore coxal cavity and is composed of a pair of semiglobular plates.

Fore coxal cavities: The fore coxal cavity is transverse, broad and situated on the basal 1/2 of the prothorax. Its anterior wall is composed of the composite ventral plate and the anterolateral part of the furcasternum, its outer lateral wall belongs to the hypomeron, and its inner lateral wall is the posterolateral part of furcasternum. The posterior wall is usually partially closed by the hypomeral projection, but is absent in *Plegaderus* (Fig. 12H). In *Syntelia*, the posterior wall is completely closed by the hypomeral projection, of which the inner apex is continuous with the intercoxal process (Fig. 10C).

Mesothorax

The mesothorax is composed of mesosternum, anepisterna, epimera, trochantins, prepectus and composite ventral plate. The mesosternum is much smaller than the pro- and metasternum. The anapleural suture is usually present between the anepisternum

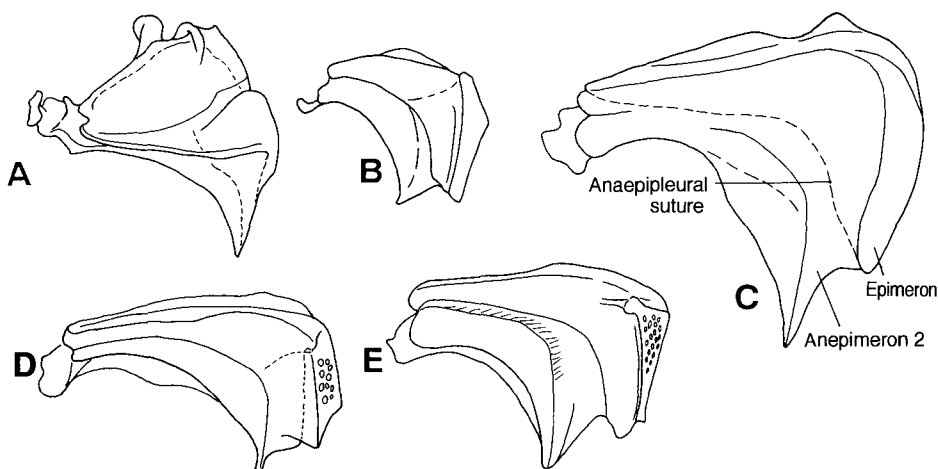


Fig. 13. Epimeron and anepimeron of the mesothorax. A: *Hololepta amurensis* (Hololeptini, Histerinae). B: *Onthophilus ostreatus* (Onthophilinae). C: *Saprinus splendens* (Sapriniinae). D: *Chaetabraeus bonzicus* (Abraeini, Abraeinae). E: *Dendrophilus xavieri* (Dendrophilini, Dendrophilinae).

and the composite ventral plate. The trochantin is difficult to recognize as a distinct sclerite in the mesothorax. The presternum is not found in the Histeroidea.

Mesonotum: The mesonotum is usually called scutellum and its parts are almost concealed under the elytra. The exposed part of the mesothorax in dorsal view is

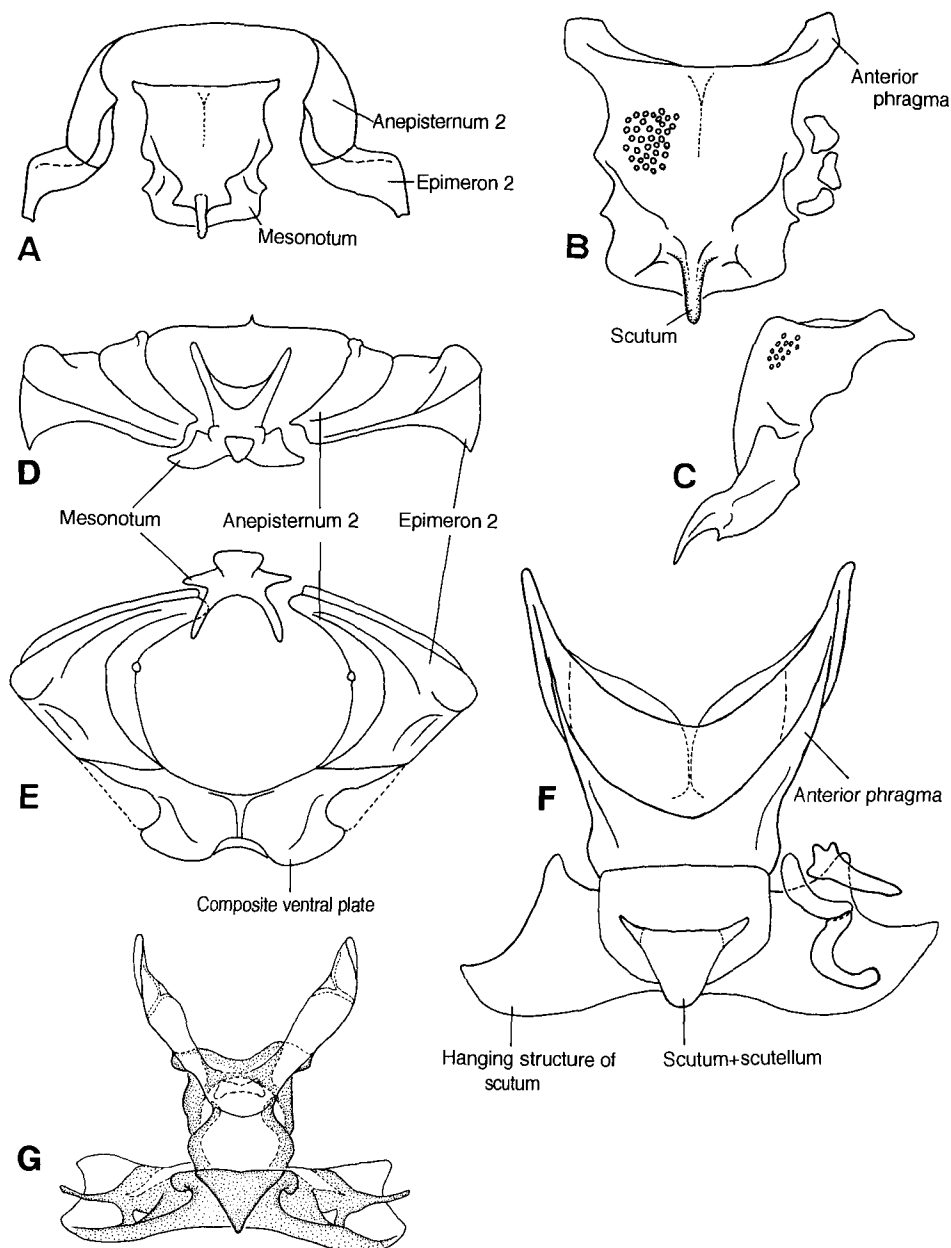


Fig. 14. Mesothorax. A, B, C: *Syntelia histeroides* (Synteliidae). D, E, F: *Plaesius* sp. (Platysomatini, Histerinae). G: *Hololepta amurensis* (Hololeptini, Histerinae). A, D: Mesothorax, dorsal view. E: Ditto, frontal view. B, F, G: Mesonotum, dorsal view. C: Ditto, lateral view.

usually triangular, but it is often invisible in minute histerids. The mesonotum is composed of anterior phragma, prescutum, scutum+scutellum and postnotum. The anterior phragma is well developed in the Histeroidea, and is represented by a pair of large deflexed lateral plates. The scutum and scutellum are amalgamated into a triangular plate in various degree in the Brachelytra. In *Syntelia* (Fig. 14A, B, C,

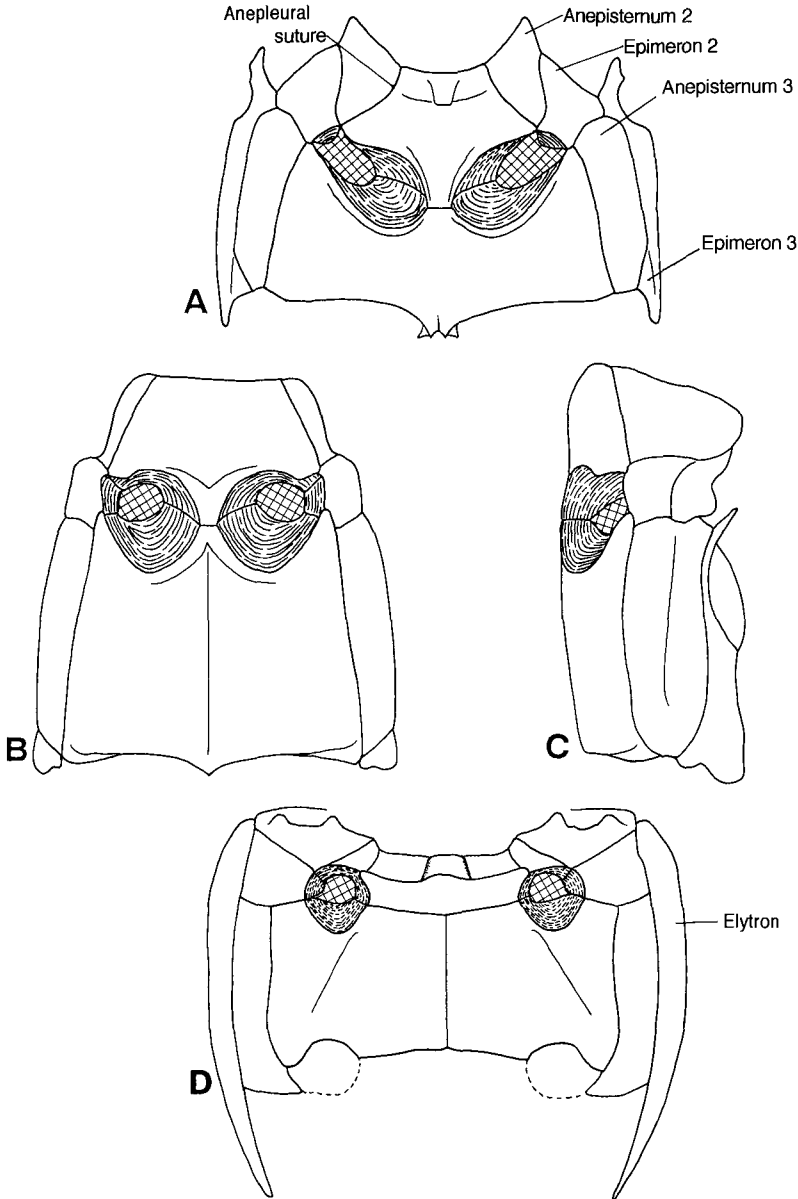


Fig. 15. Meso- and metathoraces in ventral (A, B, D) and lateral (C) views. A: *Sphaerites politus* (Sphaeritidae). B, C: *Syntelia histeroides* (Synteliidae). D: *Onthophilus ostreatus* (Onthophilinae).

39B), the plate is longitudinal triangular. In the Histeridae, the scutum is well developed, lobulate, represented by a pair of lateral hanging structures (Fig. 14F, G).

Anepisterna and epimera (Fig. 13, 14): The anepisterna and epimera are distinctly separated, and recognized in ventral view in the Synteliidae and Sphaeritidae. These plates are amalgamated in the Histeridae (Fig. 13). The anepisternum is usually not recognized in ventral view, because it is situated under the mid coxa. The pleural suture is often absent in the Histeridae (e.g. *Saprinus*, *Hololepta*, and *Plaesius*).

Prepectus: The prepectus is absent in the Synteliidae and Sphaeritidae. It is present as arcuate collars inside the anterior margin of the anepisternum in the Histeridae.

Composite ventral plate (Fig. 15, 16): The composite ventral plate of the Histeroidea represents 2 types.

Type 1. The plate is rather even, its anterior margin is thin. The sides of the plate are convergent apically. The median longitudinal ridge is developed on the posterior area. This type is present in the Synteliidae and Sphaeritidae (Fig. 15A, B, C), and more primitive than Type 2. In *Sphaerites*, the ridge is quadrangular and highly elevated.

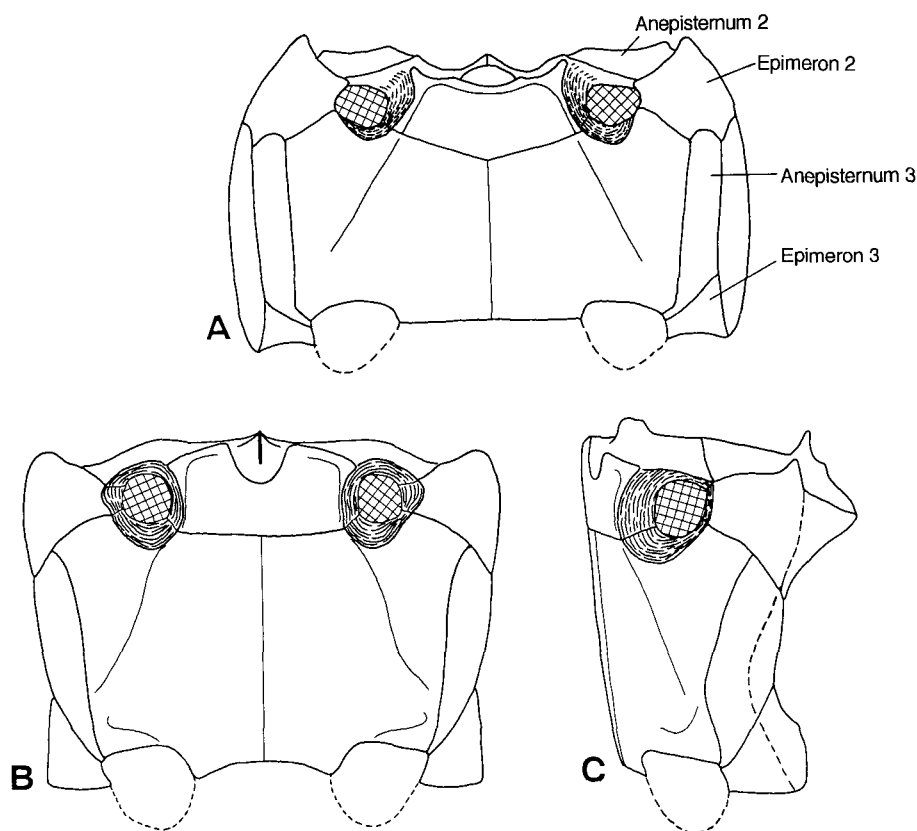


Fig. 16. Meso- and metathoraces in ventral (A, B) and lateral (C) views. A: *Saprinus splendens* (Saprininae). B, C: *Plaesius* sp. (Platysomatini, Histerinae).

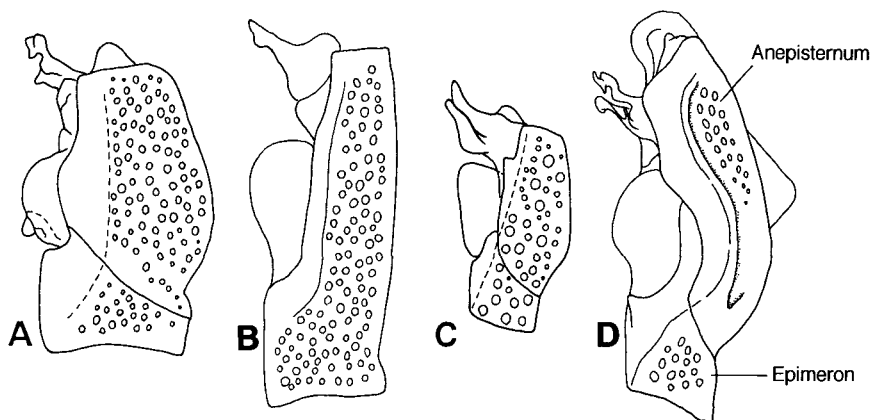


Fig. 17. Anepisternum and epimeron of the metathorax. A: *Saprinus splendens* (Saprininae). B: *Dendrophilus xavieri* (Dendrophilini, Dendrophilinae). C: *Onthophilus ostreatus* (Onthophilinae). D: *Hololepta amurensis* (Hololeptini, Histerinae).

Type 2. The median portion of plate is strongly elevated, its anterior margin is very thick. The portion is called "intercoxal disk of mesosternum". The anterolateral side is connected with the anepisternum on the anterior side. The posterior margin of the median portion is straight or angulate, not produced into a longitudinal ridge. This type is found in all members of the Histeridae (Fig. 15D, 16A, B).

Marginal mesosternal stria is present on the intercoxal disk of mesosternum. Another transverse stria is often found on median area in the Saprininae and some members of the tribe Exosternini. The stria of the Saprininae is usually strongly crenate and impressed along meso-metasternal suture, and called "meso-metasternal stria". The intercoxal disk has a transverse and subrectangular impression on the median area in the Paromalini.

Mesocoxal cavities (Fig. 15, 16): The mesocoxal cavities are variable in accord with the types of the composite ventral plate. The cavities are narrowly separated by an intercoxal ridge, and closed anteriorly by the posterior margin of the plate in Type 1. On the other hand, the cavities are broadly separated by the "intercoxal disk of mesosternum", and open anteriorly in Type 2.

Metathorax (Fig. 15, 16, 17)

The metathorax is composed of metanotum, anepisterna, katepisterna, epimera and composite ventral plate. The trochantin is difficult to recognize as a distinct sclerite in the metathorax.

Metanotum: The metanotum is composed of acrotergite, anterior phragma, prescutum, scutum, scutellum, postnotum and posterior phragma. The antecostal suture is distinct in *Onthophilus*. The plate before the antecosta is acrotergite. The acrotergite projects anteriorly and deeply emarginate at the middle in *Onthophilus*, while it is elevated as costa at the middle in *Saprinus*.

Anepisterna and epimera (Fig. 17): The anepisternum and epimeron are longitudinal quadrangular in shape. They are situated nearly parallel to each other in the Synteliidae and Sphaeritidae (Fig. 15A, C), while in the Histeridae the anepisternum is situated before the epimeron (Fig. 17). In the 1st 2 families they are long in the

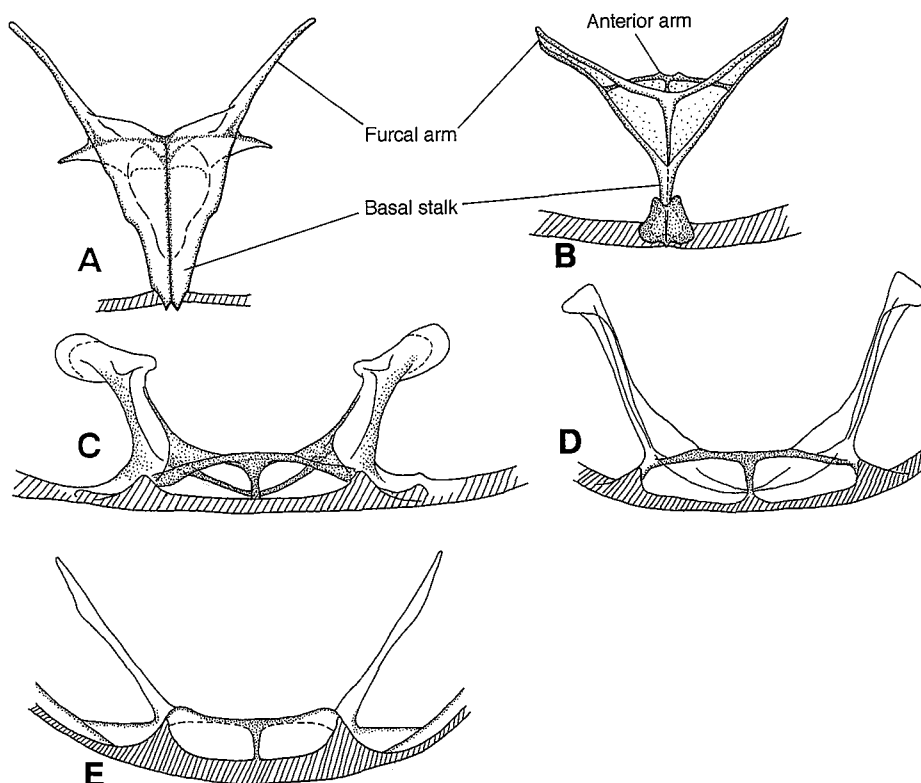


Fig. 18. Metendosternite in caudal view. A: *Sphaerites politus* (Sphaeritidae). B: *Syntelia histeroidea* (Synteliidae). C: *Hololepta amurensis* (Hololeptini, Histerinae). D: *Onthophilus ostreatus* (Onthophilinae). E: *Dendrophilus xavieri* (Dendrophilini, Dendrophilinae).

exposed area, while in the last they are rather short. The anepisternum is usually exposed completely. The anterior margin of the anepisternum is usually connected with the posterior margin of the epimeron of the mesothorax. It is not connected with the epimeron in *Chaetabraeus*, of which the anepisternum is very short and situated next to the hind coxa. The epimeron is more or less covered by the elytral epipleuron, its dorsal part is membranous and separated from the lateral part by a suture which may occur secondarily.

Composite ventral plate (Fig. 15, 16): The composite ventral plate is usually transverse, and represents 2 types.

Type 1. The anterior margin of the intercoxal process between the mid coxae is narrower than the width of the midcoxal cavity. This type is found in the Synteliidae and Sphaeritidae (Fig. 15A, B).

Type 2. The anterior margin of the intercoxal process between the mid coxae is broader than the width of the midcoxal cavity. This type is found in the Histeridae (Fig. 15D, 16A, B). The median area is called "intercoxal disk of metasternum" and the lateral area "lateral disk of metasternum". The plate is impressed by the lateral metasternal and posterior mesocoxal striae.

The discriminial line (median longitudinal line or metasternal longitudinal suture) of the composite ventral plate is usually found in the Histeroidea; however, it is lost in

Sphaerites (Fig. 15A), and is obscure in *Chaetabraeus*.

The following modifications are found on the plate. A deep fovea is present behind each lateral anterior angle in *Epiechinus* (Fig. 53A). The male of some species of *Onthophilus* is furnished with long hairs. A small tubercle is found on the mid line in *Acritus*.

Position of hind coxae: The hind coxae are set close to each other in the Synteliidae and Sphaeritidae (Fig. 15A, B), while they are broadly separated from each other in the Histeridae (Fig. 15D, 16A, B). These states are in accord with the condition of the composite ventral plate of the metathorax.

Metendosternite (Fig. 18)

The metendosternite is composed of an unpaired basal stalk and the anterior and furcal arms in pairs. The anterior arms are rudimentary in the Sphaeritidae and lost in the other groups of the Histeroidea. In *Sphaerites*, the metendosternite is Y-shaped, with the anterior arms short and the furcal arms extended obliquely and strengthened by broad and subtransparent laminae (Fig. 18A). In *Syntelia*, it is similar to that of *Sphaerites*, but the anterior arms are absent and the furcal arms are shortly developed mediolaterally (Fig. 17B). In the Histeridae, the metendosternite is U-shaped (Fig. 17C, D, E), the basal stalk is very short and transverse, and the furcal arms are broadly separated and extended obliquely.

Elytra (Fore wings)

The elytra are strongly sclerotized, usually black, sometimes maculate medially with red or yellow, and having many striae, costae or tubercles, which are useful for species identification.

The elytra are usually oval in the majority of the Histeridae, but variable in length and width. They are elongate quadrangular in the Synteliidae, Niponiinae and Trypeticinae. In the Sphaeritidae, the elytra are elongate oval.

The side margins of elytra are usually round and slightly convergent apically, and sometimes parallel. The anteromesial margin of the elytron fits to the lateral margin of mesonotum. The apical margin is usually truncate, exposing the last 2 abdominal tergites, except in *Bacanius* and related genera and also *Sphaerites*. The sutural margins of elytra always meet along the median line, forming a straight elytral suture. The cross section of the elytral suture is illustrated in Vienna (1980).

The elytra are variously striate and punctate on the upper surface. The length and situation of the striae and costae are very useful for species identification, and terminology for these characters has been proposed (Wenzel, 1944; Arnett, 1962; Ôhara, 1989). Basically the elytron has 11 striae, which are named from the outside to inside as follows: marginal epipleural, marginal elytral, external and internal subhumeral, oblique humeral, 1st – 5th dorsal, and sutural. The order of numbering in the Histeridae is opposite to that in most other Coleoptera, because the striae are frequently reduced from the inside in the Histeridae.

In the Sphaeritidae, the elytra are longitudinal rectangular, the outer lateral sides being moderately arcuate. The surface is completely striate and the striae are finely and densely punctate.

In the Synteliidae, the elytra are longitudinal rectangular. The surface is deeply striate, and the striae are crenate and often interrupted.

In the Histeridae, the elytral upper surface represents the following types.

- 1-a. All striae are nearly straight. Ends of 4th or 5th dorsal and sutural striae are not united with each other. Probably this type represents the most primitive state, being found in the Dendrophilinae, Tribalinae, and some groups of the Exosternini.
- 1-b. Fifth dorsal stria is absent. Ends of 4th and sutural striae are usually united with each other by an arc in basal area of elytron. Interstice between 4th dorsal and sutural striae very broad. This state is observed in Saprininae and some groups of Exosternini.
- 1-c. Interstice between 5th dorsal and the sutural striae not very broad. Basal ends of 5th dorsal and sutural striae are sometimes united with each other. This state is observed in the Histerinae.
2. The surface of elytra without stria or costa, only punctate variously. This type is often found in the small-sized histerids (e.g., *Bacanius*, *Acritus*, and some groups of the Paromalini).
3. The surface with strong costae. This type is found in the Onthophilinae.
4. The surface with many tubercles. A rare type, being limited to some species of *Margarinotus*.

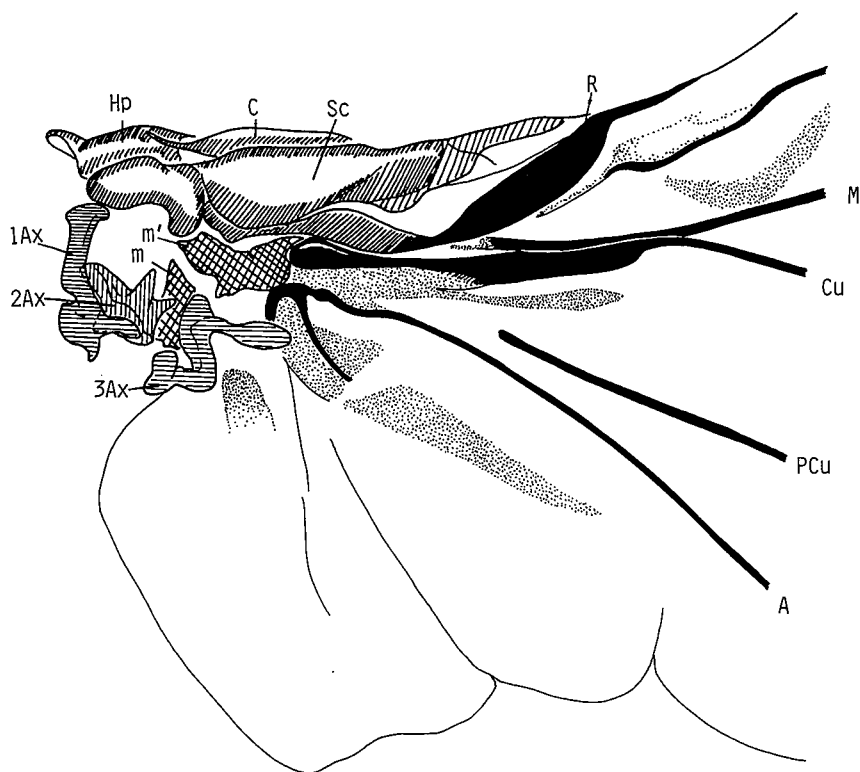


Fig. 19. Basal area of hind wing. *Merohister jekeli* (Histerini, Histerinae, Histeridae).

Hind wing (Fig. 19 – 27)

Studies of the hind wing are very poor in the Histeroidea, a few studies having been made by Forbes, 1922 (*Hister inaequalis*), Kryzhanovskij and Reichardt, 1976

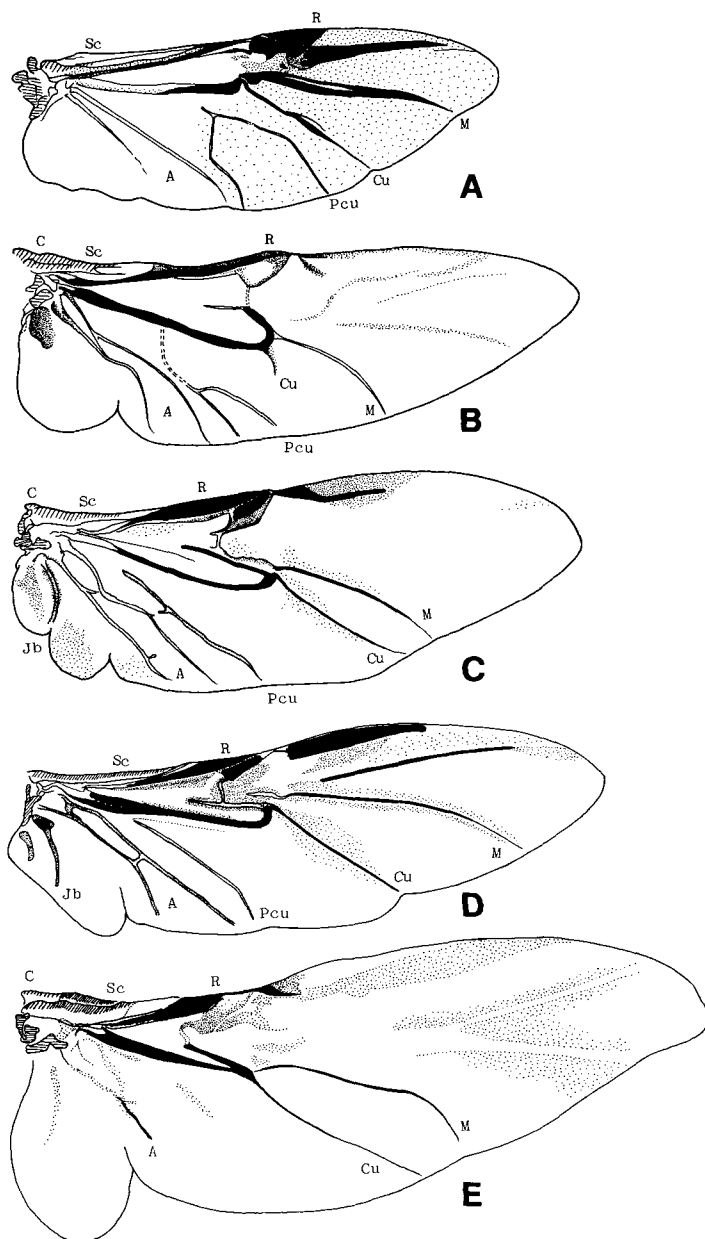


Fig. 20. Hind wings. A: *Thanatophilus* sp. (Silphidae). B: *Spherdium scarabaeoides* (Hydrophilidae). C: *Sphaerites politus* (Sphaeritidae). D: *Syntelia histeroides* (Synteliidae). E: *Onthophilus ostreatus* (Onthophilinae, Histeridae).

(*Merohister jekeli*, *Hololepta amurensis*, *Epierus comptus*, *Plegaderus* sp., *Tryponaeus* sp., *Sphaerites glabratus*, and *Syntelia histeroides*), Ôhara and Nakane,

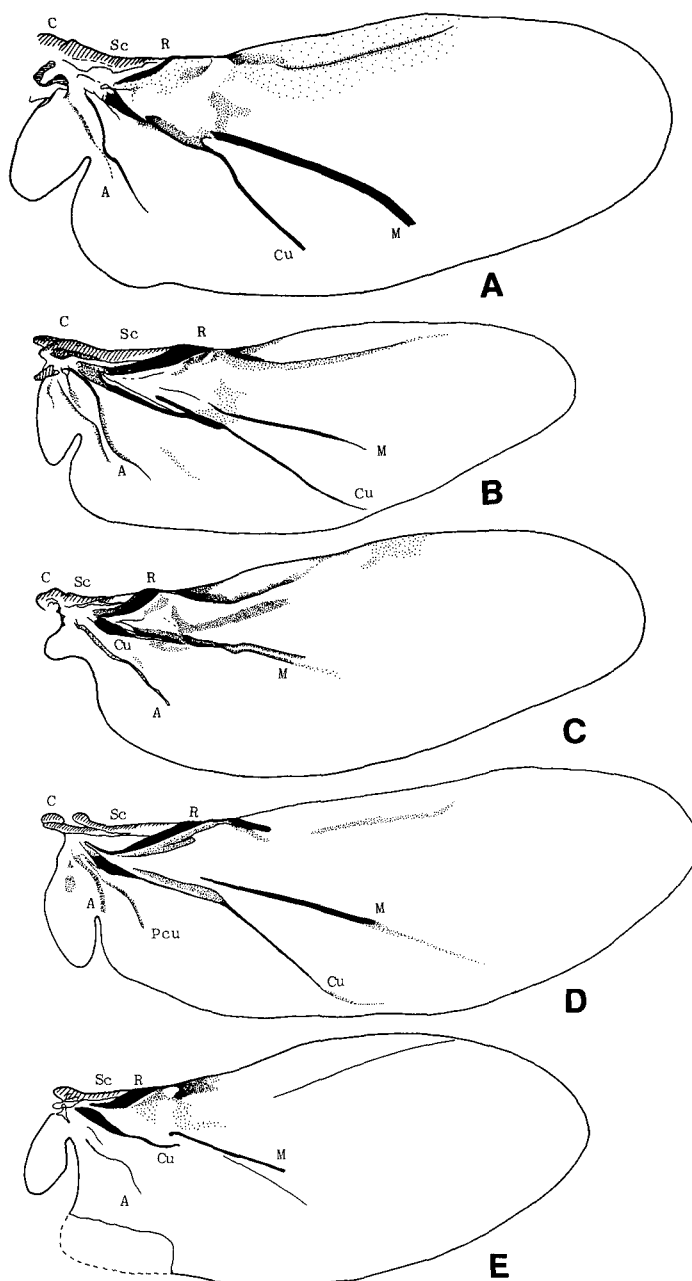


Fig. 21. Hind wings. A: *Epiechinus arboreus* (Onthophilinae). B: *Epierus* sp. (Tribalinae). C: *Trypeticus fagi* (Trypeticinae). D: *Niponius impressicollis* (Niponinae). E: *Plegaderus marseuli* (Plegaderini, Abraeinae).

1989 (*Notodoma fungorum* and *Binhister chujoi*), and Ôhara, 1991 (*Hololepta amurensis*).

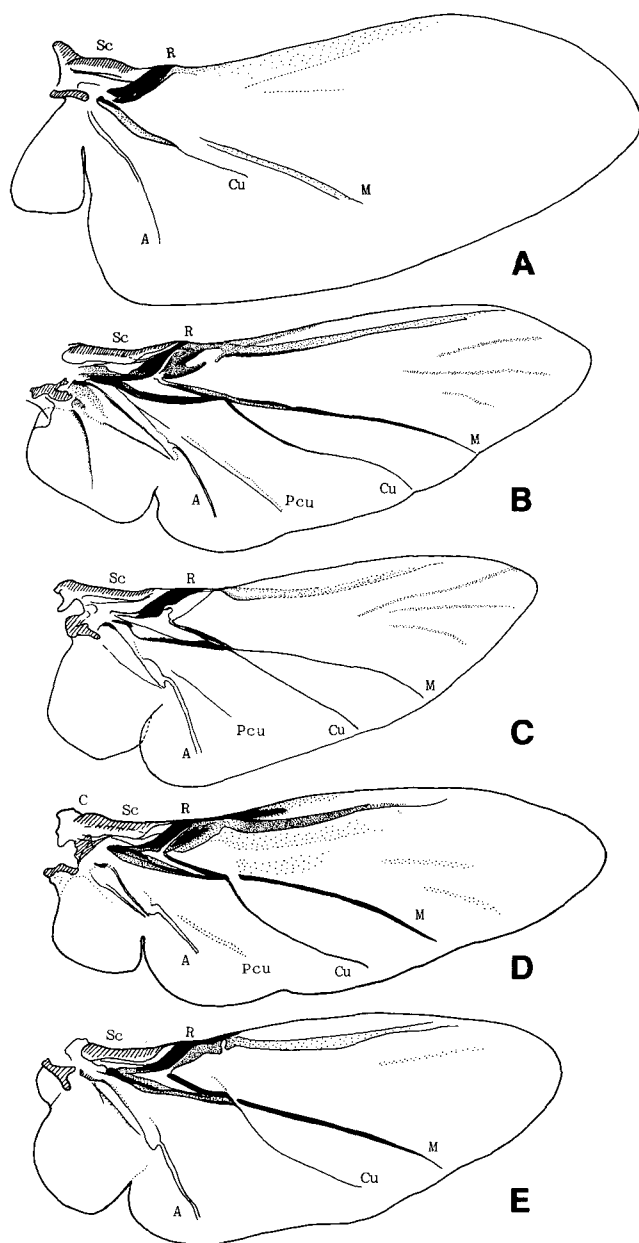


Fig. 22. Hind wings. A: *Chaetabraeus bonzicus* (Abraeini, Abraecinae). B: *Saprinus* sp. C: *Hypocaccus varians*. D: *Gnathoncus nannetensis*. E: *Eopachylopus riape* (B – E: Saprininae).

The hind wing is functional in all examined species, but reduction rarely occurs (Crowson, 1974). The wing is usually transverse oblong and hyaline, and the veins are dark brown to yellow.

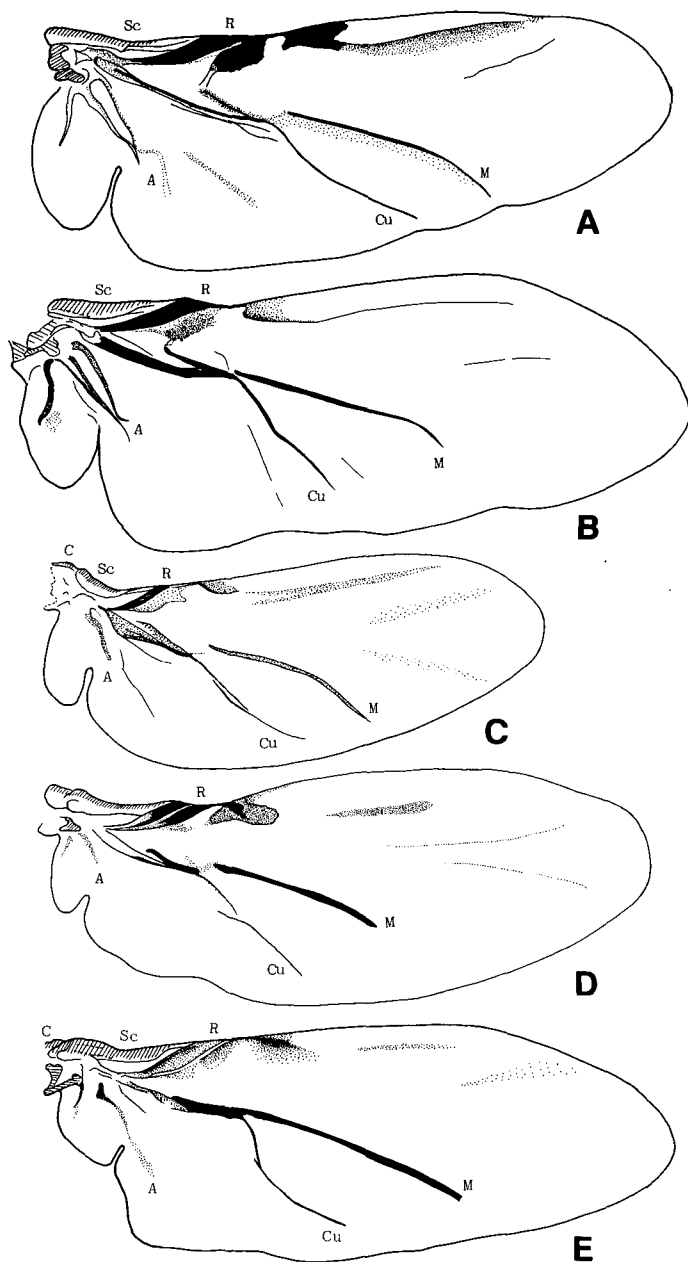


Fig. 23. Hind wings of the subfamily Dendrophilinae. A: *Dendrophilus xavieri* (Dendrophilini). B: *Anapleus nakanei* (Anapleini). C: *Carcinops pumilio* (Paromalini). D: *Australomalus montivagus* (Paromalini). E: *Pachylomalus* sp. (Paromalini).

The veins of the hind wing in the Histeroidea are frequently and variously reduced. It is difficult to determine the homology of the veins with those of general insects. Veins recognizable in the Histeridae and their names and abbreviations adopted

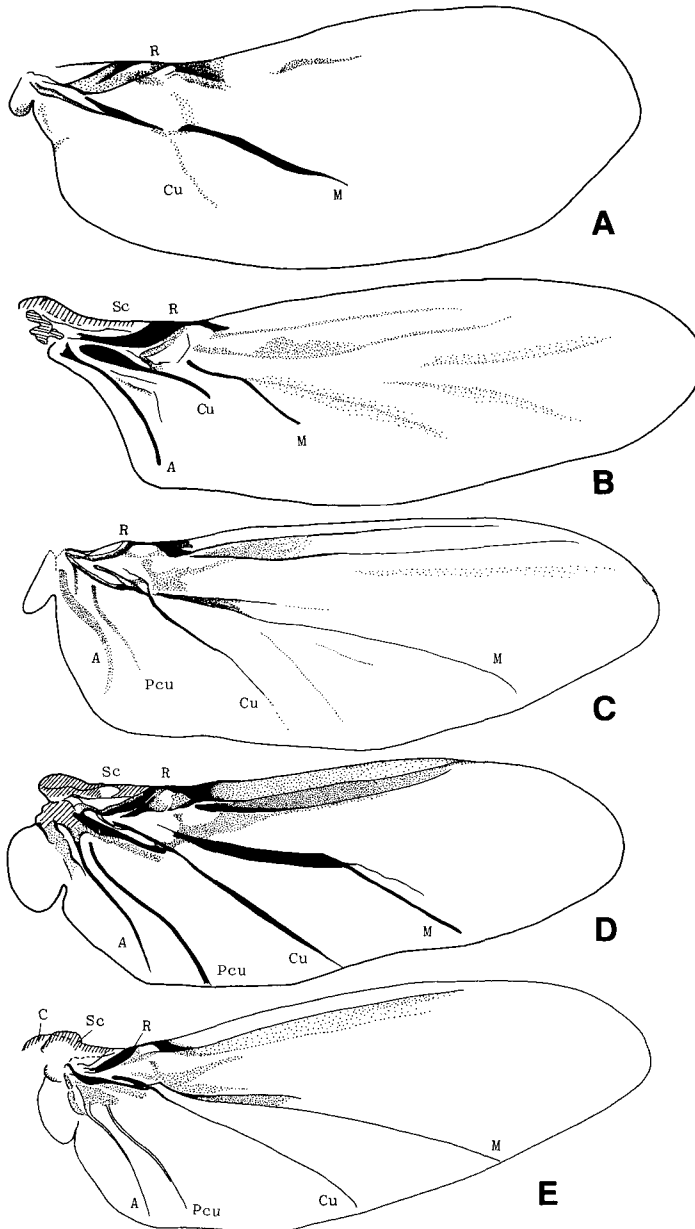


Fig. 24. Hind wings. A: *Eulomalus* sp. (Paromalini, Dendrophilinae). B: *Bacanius* sp. (Bacaniini, Dendrophilinae). C: *Hetaerius optatus* (Heateriinae). D: *Procoryhaeus* sp. (Exosternini, Histerinae). E: *Notodoma fungrum* (Exosternini, Histerinae).

are given below. In terminology I follow Snodgrass (1935) with some reference to Morimoto (1983) and Naomi (1989), who proposed terms on the basis of relationships between the axillary sclerites and the veins (Fig. 19).

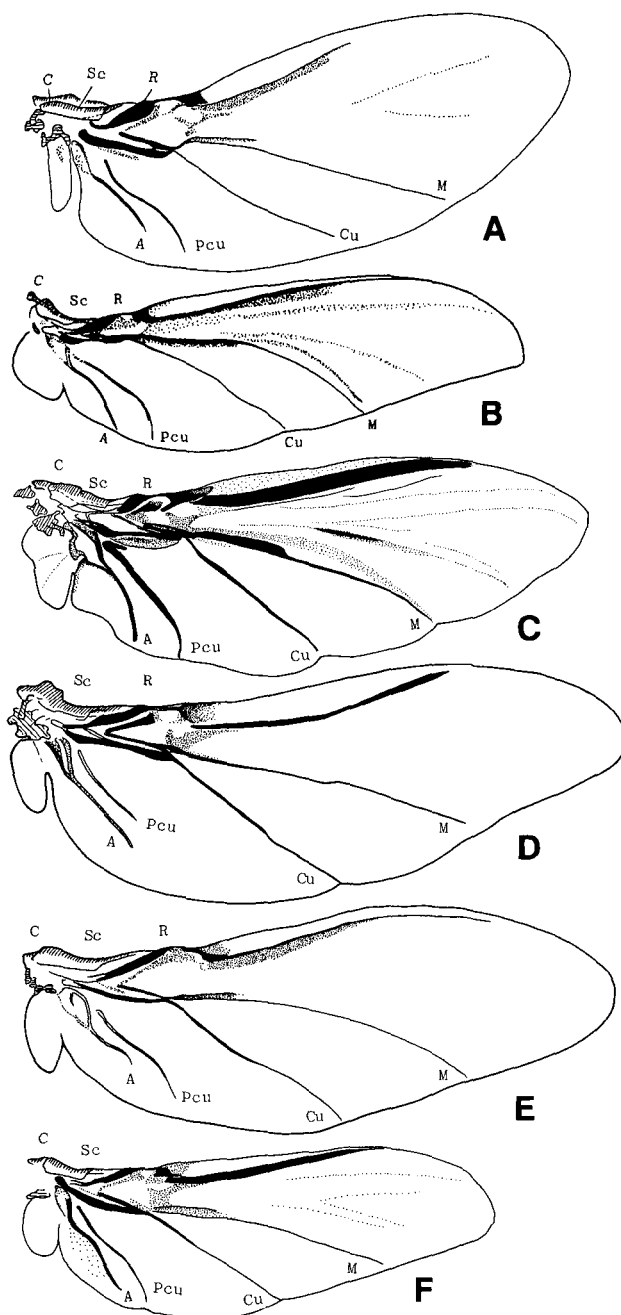


Fig. 25. Hind wings of some species of the subfamily Histerinae. A: *Binhister chujoi* (Exosternini). B: *Hololepta amurensis* (Hololeptini) (after Ôhara, 1991a). C: *Omalodes* sp. (Omalodini). D: *Platysoma* (*Apobletes*) sp. (Platysomatini). E: *Platysoma* (*Platylister*) sp. (Platysomatini). F: *Platysoma* (*Cylister*) *lineicollis* (Platysomatini).

HP: Humeral plate.

C: Costa runs on anterior margin of the wing and is unbranched; connected at the base with the anterodistal projection of the 1st axillary sclerite.

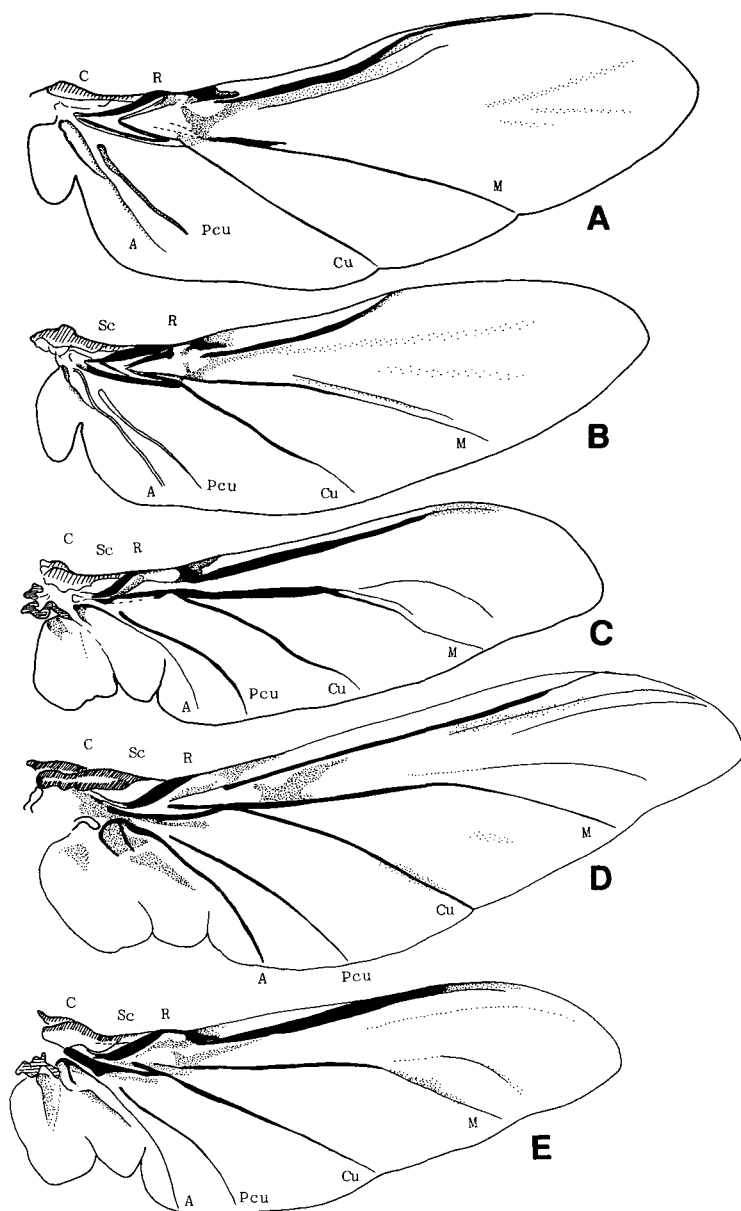


Fig. 26. Hind wings of some species of the subfamily Histerinae. A: *Ebisia satzuma*. B: *Platysoma (Platysoma) vagans*. C: *Atholus duodecimstriatus quatordecimstriatus*. D: *Merohister jekeli*. E: *Hister concolor*. (A – B: Platysomatini; C – E: Histerini).

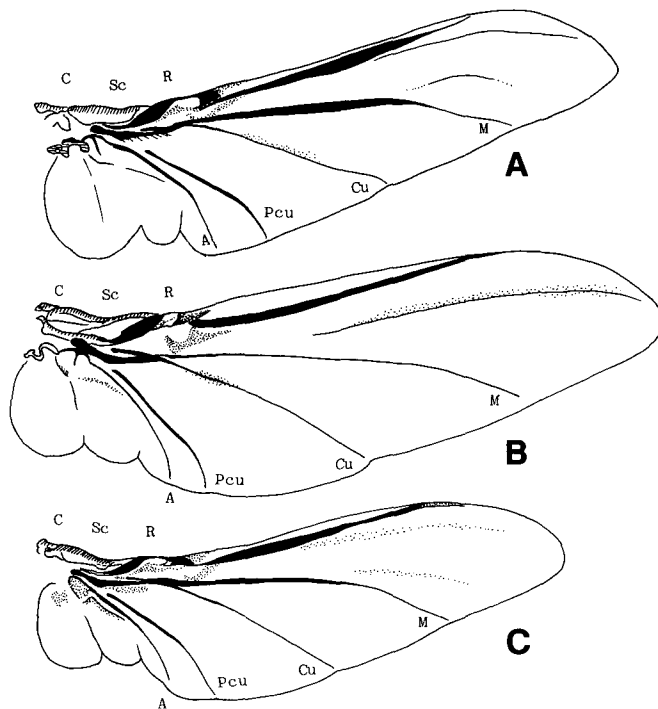


Fig. 27. Hind wings of 3 species of the tribe Histerini of the subfamily Histerinae. A: *Pachylister chinensis*. B: *Margarinotus niponicus*. C: *Margarinotus agnatus*.

Sc: Subcosta arises from the 1st axillary sclerite and is unbranched.

R: Radius usually arises from the 2nd axillary sclerite in general insects. In the Histeridae, the base of radius is reduced and not attached to the 2nd axillary.

M: Media is connected with the median plate.

Cu: Cubitus is also connected with the median plate

Pcu: Post-cubitus is divided from near the base of the cubitus.

A: Anal vein is connected with the 3rd axillary sclerite.

There is no peculiarity in the other veins and axillary plates. No study has been made on folding patterns in repose.

Following notes are probably important for the phylogenetic study of the Histeroidea.

1. A definite M-Cu loop is present in the middle area of the wing. This state is primitive (Crowson, 1955), and is found in the Sphaeritidae, Synteliidae, all genera of Sapriniinae and the following genera of the Histeridae: *Onthophilus*, *Dendrophilus*, *Anapleus*, *Epiechilus*, *Epierus* (Fig. 20C, D, E, 21A, B, 22B, C, D, E, 23A, B).
2. Wings of all the observed members of the tribe Histerini are fairly uniform in venation and shape; the M-Cu loop is situated basally (Fig. 26C – E, 27A – C); the anal lobe is bilobulate (represented by 2 lobules).
3. Hind wings of the Sapriniinae and *Dendrophilus* are very similar, and share a

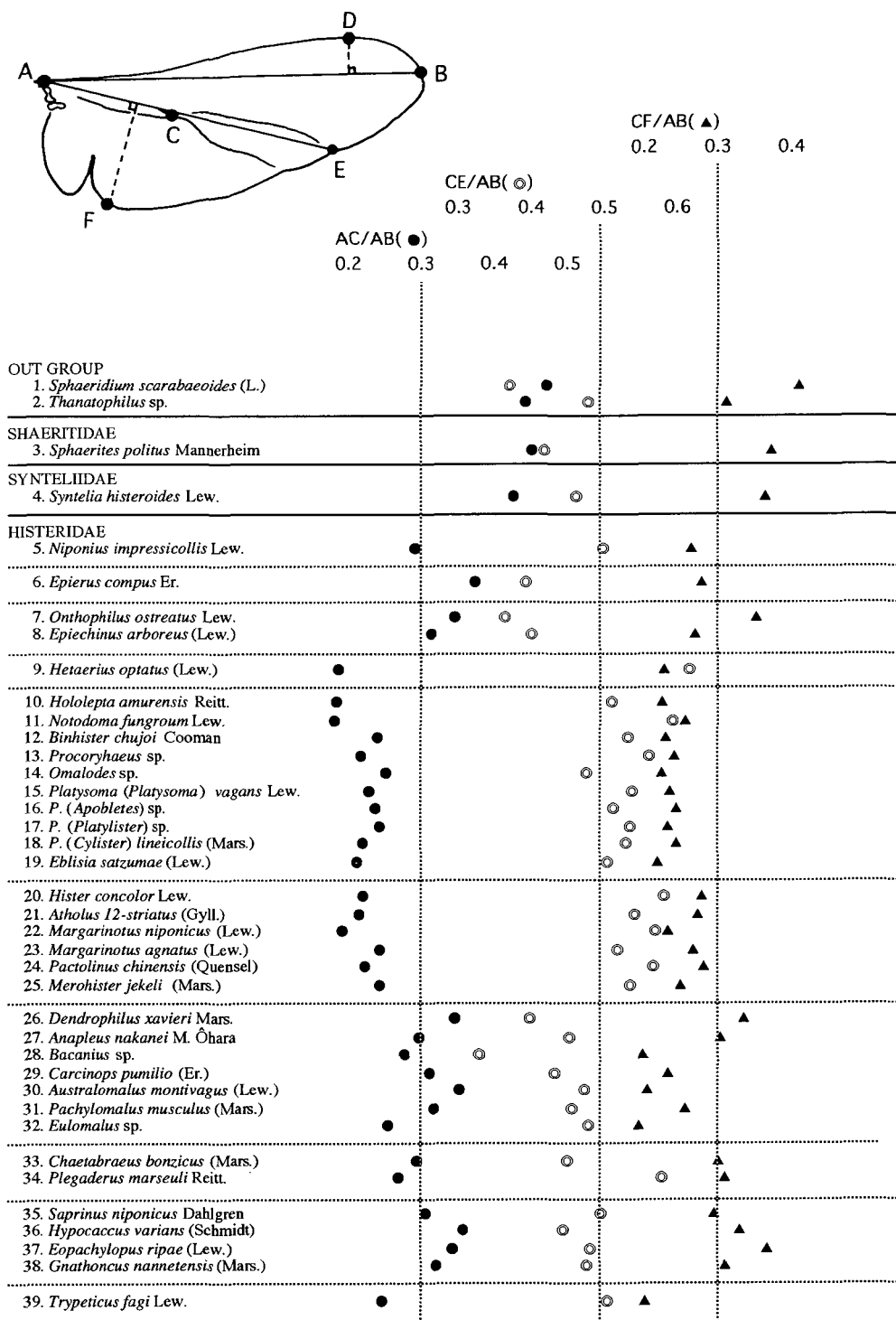


Fig. 28. Ratios in the hind wings.

characteristic and unique anal vein which is situated close to the Pcu and with a clear curve at its middle (Fig. 22B – E, 23A).

In insect wings, some general trends correlated with the absolute body size have been known. In histerids the following generalizations are recognized.

4. The veins are strongly reduced in the majority of small-sized histerids (e.g., *Bacanius*, *Platylomalus*, *Chaetabraeus*, *Plegaderus*, etc.), which are only about 1 mm long (Fig. 21E, 22A, 24B).
5. Large histerids (e.g., *Merohister* and *Pactolinus*, about 20 mm long) have slender and oblong wings. In small histerids the wings are oval, except in *Bacanius*, which has slender wings.

In Fig. 28, ratios of lengths between the several points on the hind wing are provided.

LEGS

The legs (Fig. 29, 30) are composed of coxae, trochanters, femora, tibiae, tarsi and pretarsi (including claws) in the Histeridae.

Coxae

Fore coxae: The fore coxa is subcylindrical and elongate. A deep and narrow furrow is present on apical area in *Syntelia* (Fig. 29D), apparently in association with the closely set fore coxal cavities.

Mid coxae: The mid coxa is spherical and ovate in ventral view.

Hind coxae: The hind coxa is transverse triangular and subflat in the Synteliidae and Sphaeritidae, while in the Histeridae it is small and thick, and triangular in ventral view. The former type represents a more primitive state than the latter.

Trochanters

The fore trochanter is small and subconical, and subtriangular in ventral view. The mid and hind trochanters are similar to it, usually with setae in the posterior margin, but often without them in the hind trochanter.

Femora

The fore, mid and hind femora are baculiform and thick, often with setae on the anterior (fore femur) or posterior margin (mid and hind femora). There are robust truncate setae on the fore femur of *Saprinus*. A longitudinal stria (profemoral stria) is present along the posterior margin of the fore femur on the ventral side in the tribe Histerini; in the tribe Platysomatini, the ventral surface is corrugated.

Tibiae

The shape of the tibia is subject to various modifications, which may vaguely be classified into the following 3 types.

1. The tibiae are slenderer than the femur and baculiform. Denticles on the margin of the tibiae are very small.
2. The tibiae are somewhat expanded apically, and wider than the corresponding femur. The denticles are large and well developed.
3. The tibiae are strongly dilated, thus more or less round in outline. The denticles are weakly developed.

The 1st type may be the most primitive and is found in the Sphaeritidae and some groups of the Histeridae, that is, Onthophilinae, Niponiinae, Trypeticinae and some genera of the Exosternini (Fig. 29A, G). The 2nd type is common in the Histeridae.

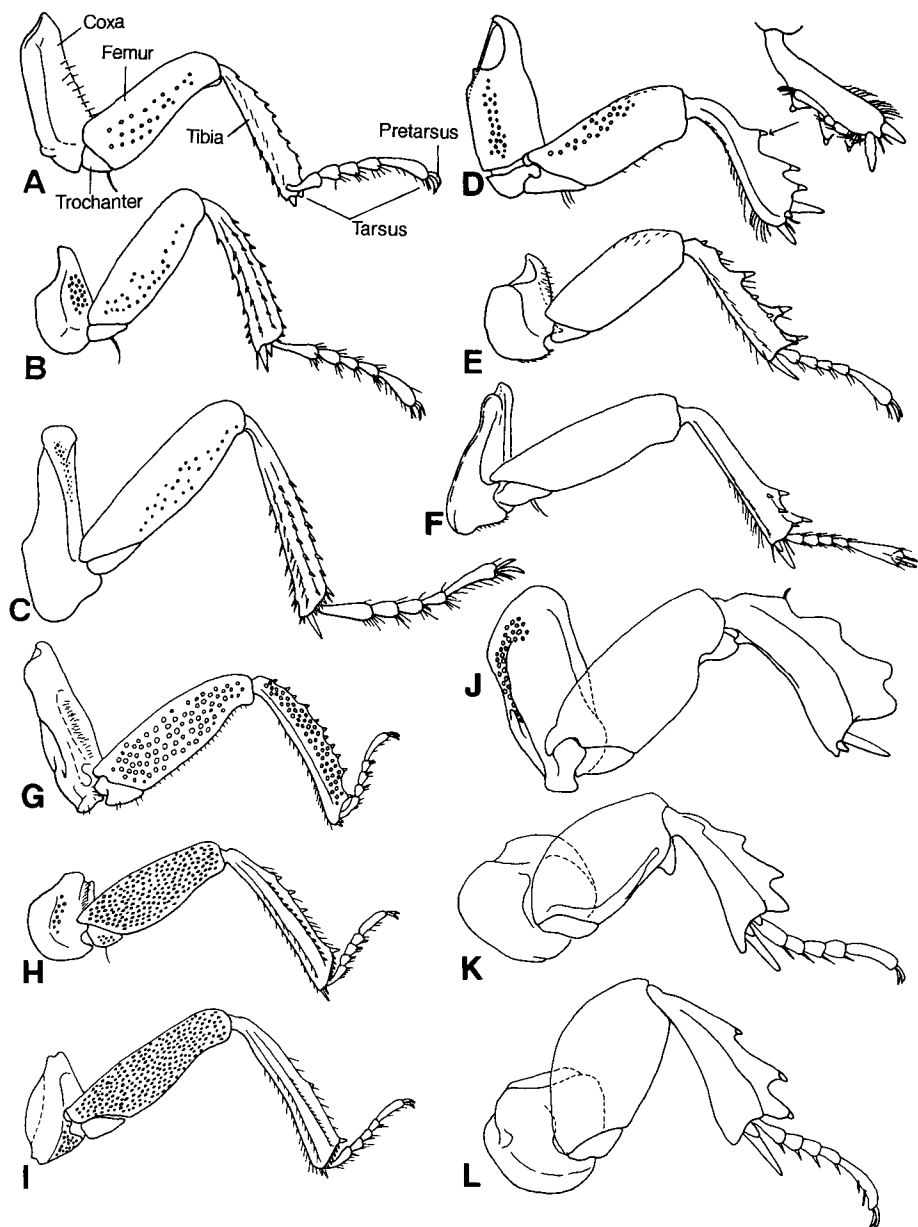


Fig. 29. Legs. A, B, C: *Sphaerites politus* (Sphaeritidae). D, E, F: *Syntelia histeroidea* (Synteliidae). G, H, I: *Onthophilus ostreatus* (Onthophilinae, Histeridae). J, K, L: *Hololepta amurensis* (Hololeptini, Histerinae). A, D, G, J: Fore legs. B, E, H, K: Mid legs. C, F, I, L: Hind legs.

The 3rd type is present in some species of the Hetaeriniinae and *Dendrophilus* (Fig. 30D, E, F). The last type is often found in the members of myrmecophilous histerids.

The tarsal groove is present on the dorsal surface of the fore tibia in the Synteliidae and Histeridae. In the Hololeptini and the Platysomatini, the groove is very deep and shaped like an S. It is situated on the apical margin in the tribes Dendrophilini

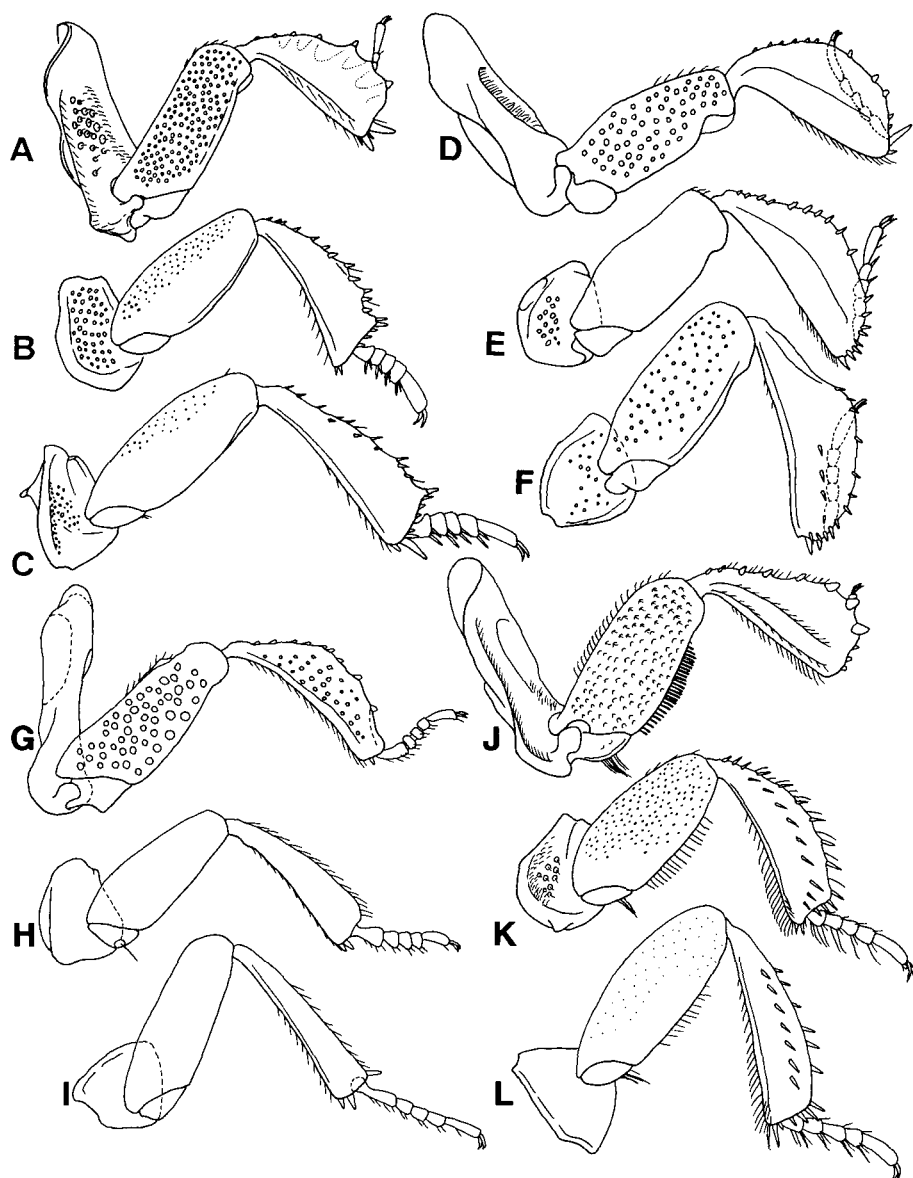


Fig. 30. Legs. A, B, C: *Margarinotus cadavericola* (Histerini, Histerinae, Histeridae). D, E, F: *Dendrophilus xavieri* (Dendrophilini, Dendrophilinae). G, H, I: *Chaetabraeus bonzicus* (Abraecini, Abraecinae). J, K, L: *Saprinus splendens* (Saprininae). A, D, G, J: Fore legs. B, E, H, K: Mid legs. C, F, I, L: Hind legs.

and Anapleini. The ventral surface of the tibiae is densely covered with long hairs or robust or long setae in some members of the *Hypocaccus*, *Eopachylopus* (Fig. 155) and *Philothis*. This condition is often associated with their habitats in sand on beach.

Tarsi

The tarsus is composed of 5 tarsomeres in general, but in *Acritus* 4-segmented in the hind leg, thus the tarsal formula is 5-5-4. The relative lengths of the tarsomeres are rather uniform, the 1st – 4th tarsomeres being short and the 5th long. In *Saprinus*, the mid tarsus shows a sexual dimorphism, being furnished with long setae in the male.

ABDOMEN

General structure

The abdomen is fundamentally composed of 10 segments in the Histeroidea. The elytra are truncate, and the 6th and 7th abdominal terga are exposed and strongly sclerotized in the Histeridae. On the other hand, in the Sphaeritidae and Synteliidae, the dorsum of the abdomen is almost covered by elytra and only the 7th abdominal tergite is exposed. The 1st and 2nd sterna are completely lost. The 3rd – 7th sterna are exposed and strongly sclerotized. The 8th, 9th and 10th segments are almost telescoped into the 7th.

Abdominal segments (Fig. 31)

Each of the 3rd – 7th terga is transversely rectangular in shape, and a transverse tergal suture runs along the basal margin.

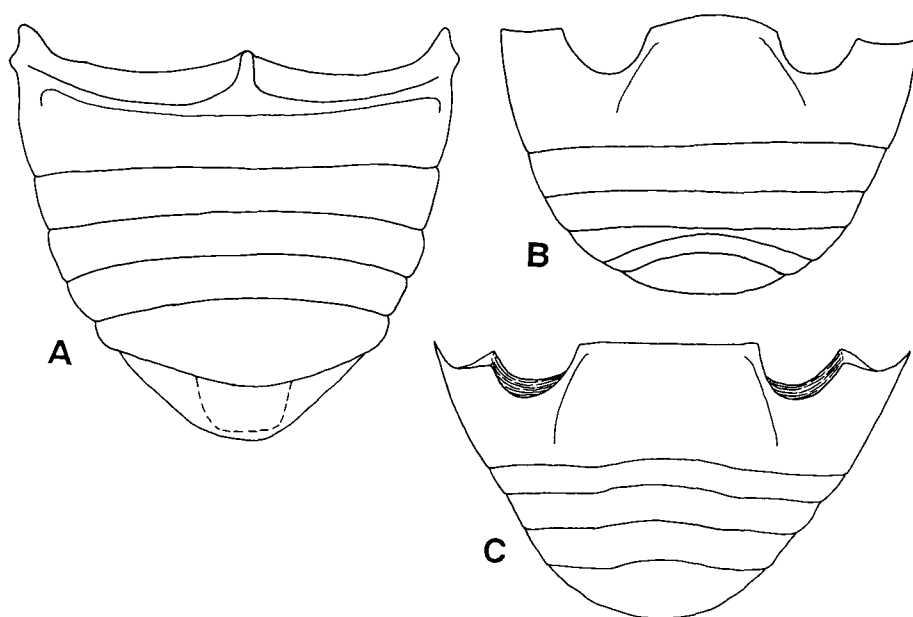


Fig. 31. Abdomen. A: *Sphaerites politus* (Sphaeritidae). B: *Saprinus splendens* (Saprininae). C: *Plaesius* sp. (Platysomatini, Histerinae).

The basal margin of the 3rd sternum is longitudinally carinated medially and the sides are shallowly concave for receiving hind coxa in the Synteliidae and Sphaeritidae. In the Histeridae, the carina is not present and the sides of the basal margin are roundly and deeply emarginate for receiving hind coxae, the emarginate portions being broadly separated from each other. The disk of the 3rd sternum is usually with 1 or 2 pairs of striae on each side of the median area. In taxonomic descriptions the disk of the 3rd is often called "1st abdominal sternum" and the striae "1st abdominal striae", because the true 1st and 2nd disks are absent and the 3rd appears to be the 1st. The 4th – 7th sterna are convex and a little broader than the terga, and each of them is transversely trapezoidal in shape in ventral view. The lateral sides of sterna are usually convergent posteriorly. The posterior margin of the 7th sternum is arcuately emarginate for receiving the posterior margin of the 7th tergite (pygidium).

Genital segments

The 8th, 9th and 10th abdominal segments are called genital segments. These segments are not exposed, and weakly sclerotized and pigmented.

Male: The 8th tergite is usually rectangular to subrectangular in shape in dorsal view and often divided into 2 plates by a longitudinal mid line. A pair of short or long processes are usually present at the anterolateral corners of the tergite. The 8th sternum is more variously modified than the tergum. For example, it is divided into 2 plates by a longitudinal mid line, and each plate is elongated posteriorly and rounded apically in the Sphaeritidae (Fig. 38), *Carcinops* (Fig. 96), some members of the tribe Platysomatini (Fig. 58, 59, 60) and Histerini. The ventral surface is strongly sclerotized and densely covered with hairs in *Saprinus* (Fig. 137, 139, 140) and most Saprininae. The 8th sternum is oblong in ventral view, and the caudal disk with a round disk or some small oblong disks in the tribe Paromarini (Fig. 99, 102, 105, 108, 110, 113, 115, 117, 120).

The 9th tergum is often divided longitudinally. This state is found in *Gnathoncus*, *Carcinops*, *Anapleus*, *Epiechinus* and *Platysoma* (Fig. 132, 133, 134, 96, 87, 94, 54, 58, 59, 60, 62, 65). The anterolateral corner is projected. In *Trypeticus*, the projection is very long (Fig. 165). The posterior margin is connected with the 10th tergum and nearly straight, but often emarginate arcuately or acutely for fitting the anterior margin of the 10th. The 10th tergum is present in the Histeroidea, but, in my examination, not in *Trypeticus*.

The 9th sternum is composed of an unpaired plate, and is called "spicule". It is a thin plate, longer than broad, and may be longitudinal and oblong in its primitive state as represented by the Sphaeritidae and Synteliidae, *Plegaderus*, and Niponiinae (Fig. 38E, 40E, 129F, 44E, 47E). The anterior apex is strongly sclerotized in a V in *Epierus* (Fig. 51E) and *Niponius*. In most Histeridae, the 9th sternum is modified variously. The posterior apex is expanded and produced into a triangular disk in *Anapleus* (Fig. 87G, 94G), *Platylomalus* (Fig. 110F) and *Dendrophilus* (Fig. 82F). The lateral angles of the posterior apex are elongated posterolaterally, thus the sternum is T-shaped in the tribe Histerini and Platysomatini. In the Saprininae too, it is often shaped like a T, the anterior apex often expanded (Fig. 132I, J, 133I, 134I, 137I, 138I, 139I, 140H, 148G, 149G, 150G, 151G, 155G, 157G, 161H). The projections of the posterior apex are united together on dorsal side through membrane to form a ring, into which the basal piece is fitted. In *Merohister uenoi*, the spicule forms a sclerotized ring (Ôhara, 1992b).

Female: The female genital segments have not been studied enough to make a revision. They are out of scope in this study.

Male genitalia

Male genitalia consist of 3 parts: basal piece, a pairs of parameres, and median lobe. Sharp and Muir (1912) first made comparative study of Coleoptera. In Histeridae, the male genitalia are considered to be the most useful character for the classification at species level, because they are usually different in shape from species to species and morphologically stable within a species.

Basal piece: The basal piece is usually a ring surrounding the basal part of the median lobe, and the posterior margin is connected with basal margin of paramere. In *Syntelia*, *Sphaerites* and *Anapleus*, it is an incomplete ring, being not closed on dorsal or lateral side (Fig. 38A, B, 40A, B, 87A, B, 89A, B, 94A, B). This condition may be the most primitive in the Histeroidea. It is absent in some distant taxa: *Acritus*, *Bacanius* and part of Hetaeriniinae. The basal piece is variable in length in the Histeroidea. It is usually 1/2 as long as the paramere, but, in *Niponius* (Fig. 44A, 47A), members of the tribe Paromalini (Fig. 96A, 99A, 102A, 105A, 108A, 110A, 113A, 115A, 117A, 120A, 122A), *Epierus* (Fig. 51A), *Trypeticus* (Fig. 165A) and some members of the tribe Platysomatini (Fig. 65A), it is as long as or much longer than the paramere.

Parameres: The parameres are principally represented by a pair of slender and lobate structures in the Coleoptera. In the Histeroidea, the parameres are usually fused basally on the ventral side to form a tube structure. Their dorsal side is usually provided with a slit. The basal margin of the parameres is connected with the posterior margin of the basal piece. The most primitive state of the parameres is found in *Sphaerites* and *Syntelia* (Fig. 38A, 40A): the parameres are not fused dorsally and also separated in their apical halves ventrally; the median lobe is extruded from the ventral side. In the majority of the Histeridae, the parameres are partly fused in the basal 1/2 and moderately separated in the apical 1/2; the median lobe is extruded from the dorsal side. The median lobe is, however, extruded from the ventral side in *Hololepta* and some members of the tribe Exosternini (Ôhara and Nakane, 1989). The parameres are various in shape and length: they are usually slender and convergent apically; in *Platysoma* (Fig. 58A, 59A, 60A), the apical part is lobate, elongate apically and convergent apically; especially in *Apobletes* (Fig. 65A) the lateral side is strongly emarginate; in members of the Paromalini, it is short.

Median lobe: The median lobe is usually slender and is surrounded by the parameres and the basal piece. It is various in shape, varying from a flat and weakly sclerotized lobe to a strongly sclerotized one with armature. Their shapes may tentatively be classified into the following types.

1. A weakly sclerotized and flat lobe is found in *Syntelia*, *Sphaerites*, *Niponius*, *Trypeticus*, *Epierus* and most members of the Saprininae. This condition is the most primitive state.
2. The lobe is moderately sclerotized and flat, with a slender process on the basal angle. This condition is found in the following taxa: *Onthophilus*, *Epiechinus*, most members of the Dendrophilinae, Exosternini, Platysomatini and some members of the Histerini.

3. The lobe is strongly sclerotized and provided with armatures, a condition probably derived from Type 2. This is found in some members of the tribe Histerini: *Hister*, *Atholus*, *Zabromorphus*, *Merohister*, *Margarinotus* and so on (Ôhara, 1989, 1992a, 1992b, 1992c, 1993).

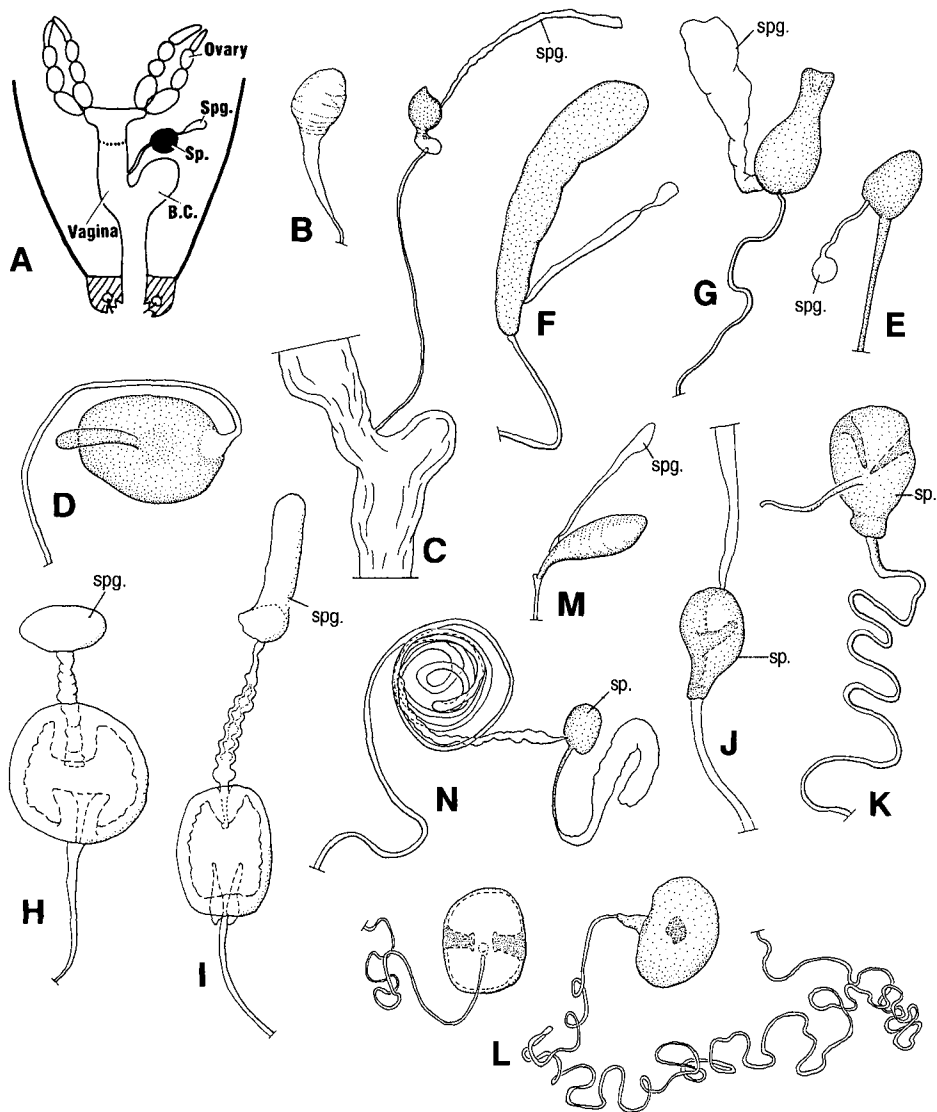


Fig. 32. Spermatheca and spermathecal glands of the female genitalia. A: schematic. B: *Sphaerites politus* (Sphaeritidae). C: *Syntelia histeroides* (Synteliidae). D: *Niponius impressicollis* (Niponiinae, Histeridae). E: *Trypeticus fagi* (Trypeticinae). F: *Chaetabraeus bonzicus* (Abraeinae). G: *Plegaderus marseuli* (Plegaderini, Abraeinae). H: *Hypocaccus varians varians* (Saprininae). I: *Gnathoncus nannetensis* (Saprininae). J: *Carcinops pumilio* (Paromalini, Dendrophilinae). K: *Platylomalus niponensis* (Platysomatini, Dendrophilinae). L: *Eulomalus* sp. (Paromalini, Dendrophilinae). M: *Onthophilus ostreatus* (Onthophilinae). N: *Epierus* sp. (Tribalinae). sp: spermatheca; spg: spermathecal gland; bc: bursa copulatrix.

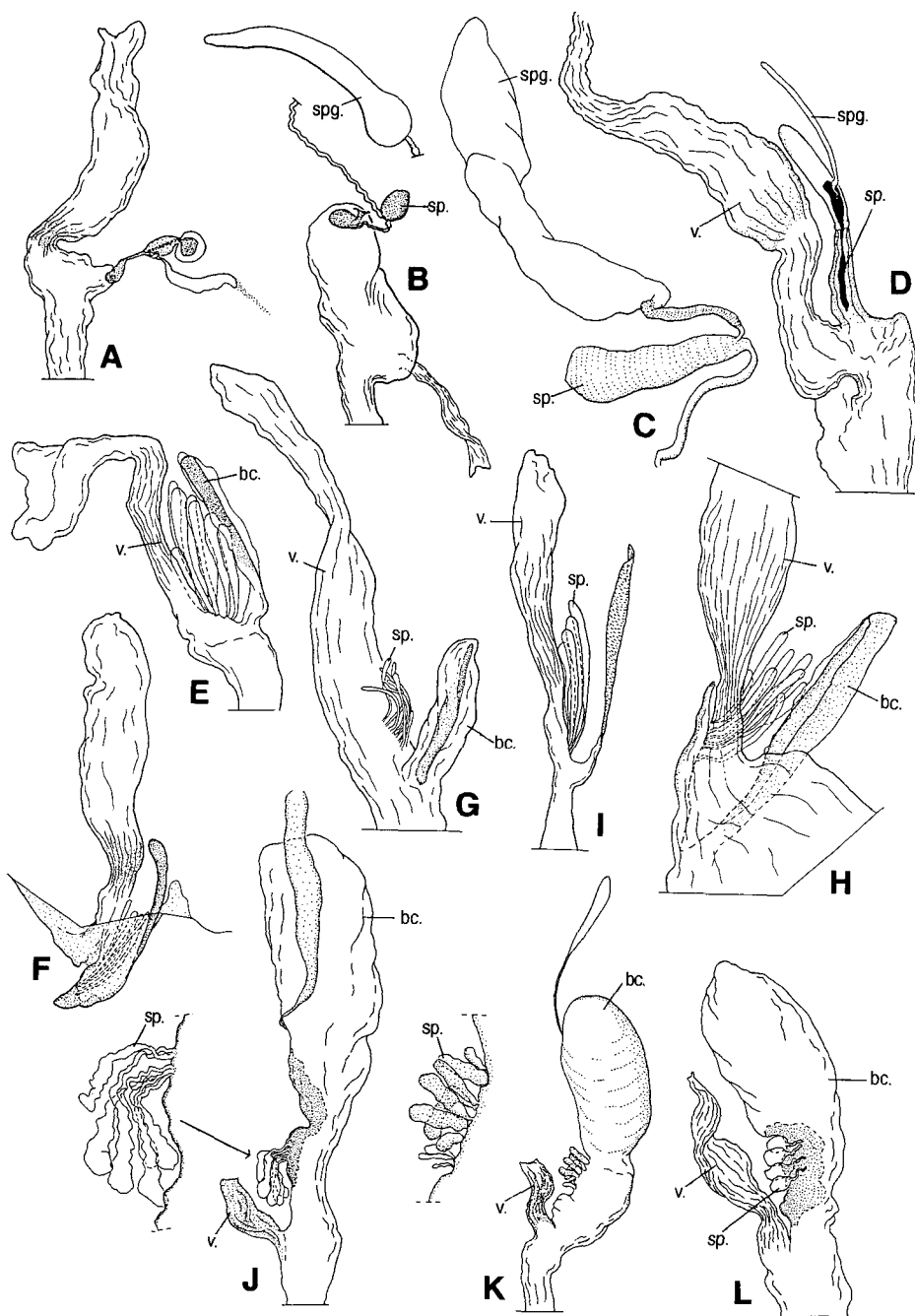


Fig. 33. Spermatheca and spermathecal glands of the female genitalia of the subfamily Histerinae. A: *Hololepta amurensis* (Hololeptini) (after Ôhara, 1991a). B: *Platysoma* sp. (Platysomatini). C: *Omalodes* sp. (Omalodini). D: *Notodoma fungorum* (Exosternini). E: *Merohister aino*. F: *Hister japonicus*. G: *Hister concolor*. H: *Hister congener*. I: *Atholus pirithous*. J: *Margarinotus* sp. K: *Margarinotus* sp. L: *Margarinotus* sp. (E – L: Histerini).

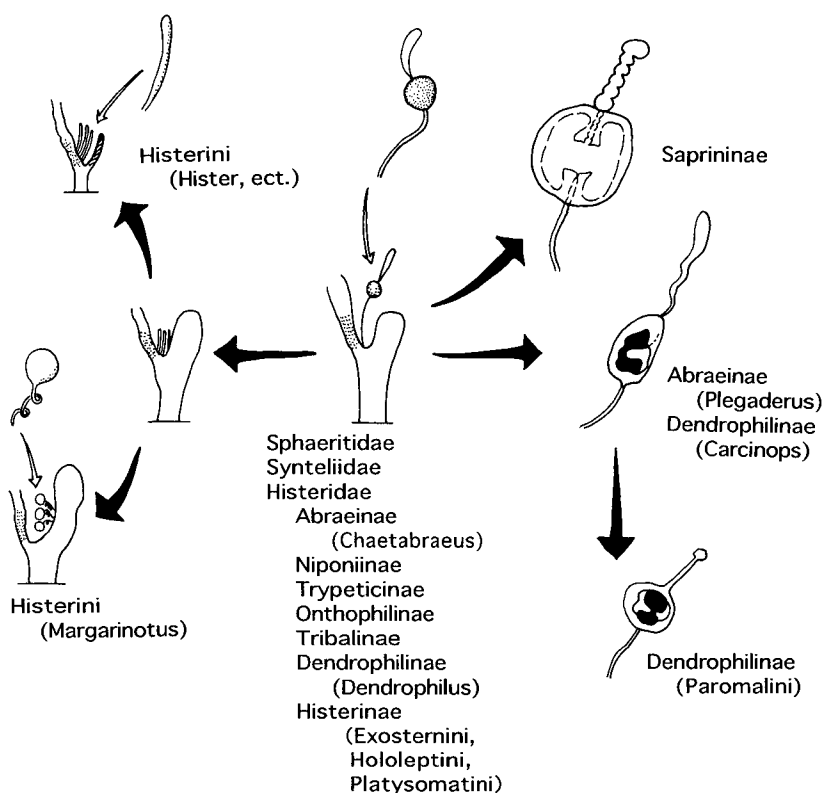


Fig. 34. Spermatheca and spermathecal gland: transformation series.

Female genitalia

Spermatheca: The spermatheca is the sperm receptacle of the female. De Marzo and Vienna (1982c) first made a careful morphological study of the organ in the Histeridae, and recognized 2 fundamental patterns: I) spermatheca including 1 receptacle, a more or less long duct and a distinct gland; II) spermatheca including 4 – 9 sessile receptacles, without a distinct spermathecal gland. The 2nd pattern is found in the tribe Histerini, while the 1st widely in other groups. In this study, I have also recognized both the patterns, which may be subdivided into the following 6 types:

I). Spermatheca shaped like a globe, strongly sclerotized.

1. Without a projection or invagination.
2. With a developed invagination.
3. With a developed external projection.
4. With developed internal projections.

II). Spermatheca consisting of several small sacs each with slender tube basally.

5. The sacs are attached to the wall of the vagina, the tubes being not coiled.
6. The sacs are attached to the wall of the bursa copulatrix, usually small and globe-shaped; the basal tubular part is often coiled.

The 1st type is probably the most primitive state, being common in various

groups.

The 2nd type is found in the Sapriniinae (Fig. 32H, I) and *Plegaderus* (Fig. 32G). The spermatheca of the Sapriniinae is strongly vaginate around the area connected with the duct of spermatheca and also around the area connected with the spermathecal gland. *Plegaderus* has a pear-shaped spermatheca feebly invaginate apically.

The 3rd type is found in *Niponius* (Fig. 32D) and *Platylomalus* (Fig. 32K). Probably this type has independently appeared in these genera.

The 4th type is found in the Dendrophilinae, with 1 internal projection in *Carcinops* and 2 in *Platylomalus* (Fig. 32J) and *Eulomalus* (Fig. 32L).

The 5th and 6th types are present only in the tribe Histerini, the former is observed in *Hister*, *Atholus*, *Merohister*, *Zabromorphus*, and *Pactolinus* (Fig. 33E, F, G, H, I), while the latter is found only in *Margarinotus* (Fig. 33J, K, L).

The spermathecal gland is usually a small saccule, weakly sclerotized and with a long straight or coiled spermathecal duct, but is sometimes absent.

5. PHYLOGENY

Phylogenetic Relationships of the Families

The superfamily Histeroidea was adumbrated by Sharp and Muir (1912), with the remark that "four families Histeridae, Synteliidae, Sphaeritidae and Niponiidae are so closely related by the aedeagus, that they might form one family". The group was adopted by most histerid systematists (Reichardt, 1941; Wenzel, 1944; Crowson, 1955; 1974; Kryzhanovskij and Reichardt, 1976; Mazur, 1984; Hisamatsu, 1985b).

The superfamily Histeroidea is included in the Staphyliniform lineage, which is often divided into 3 superfamilies: the aquatic Hydrophiloidea and the terrestrial Histeroidea and Staphyliniidea. The Histeroidea have been considered the most closely related to the superfamily Hydrophiloidea by some authors (Böving and Craighead, 1931; Reichardt, 1941; Morimoto, 1986). On the contrary, Crowson (1955; 1974) insisted that the Histeroidea are more closely allied to Staphyliniidea than to the Hydrophiloidea. But recent works tend to refute Crowson's hypothesis. Discoveries of larvae in the primitive histeroid families Sphaeritidae and Synteliidae (Nikitsky, 1975; Mamayev, 1976) have shown that these larvae share numerous specializations with Histeridae and Hydrophilidae.

The Histeroidea and Hydrophiloidea are united by the following derived larval character states: 1) labrum fused to head capsule and without tormae, 2) mandible falcate with reduced molar lobe, 3) basal segment (palpifer) of maxillary palp complete and bearing articulated appendage, 4) tentorium with posterior arm attached directly to head, with a short bridge attached well above venter of head, 5) spiracle biforous with an elateroid molting process, 6) abdomen largely membranous with scattered small sclerites, and 7) final instar without ecdysial line on head. Known pupae lack functional spiracles on the first abdominal segment. Adult antennae are short, usually with a sharply differentiated club composed of 3 densely pubescent segments; abdominal segment 7 is invaginated at least ventrally; and the 7th or 7th and 8th spiracles are atrophied. Nearly all larvae are carnivorous with mouthparts adapted for extraoral digestion. Recently Lawrence and Newton (1982) have proposed to include the Histeroidea in the Hydrophiloidea (excluding Hydraenidae). According to them, there

Table 2. Character states used in Wenzel-Mazur System and their presumed polarities.

No.	Mnemonic	Code	State
1	PsLo	0	Prosternal lobe present (Histeromorphae).
		1	Prosternal lobe absent (Saprinomorphae).
2	AnCa	0	Antennal cavities absent.
		1	Antennal cavities closed beneath by the prosternal alae.
		2	Antennal cavities [if present] open beneath.
3	AnSc	0	Antennal scape normal, the club usually a little longer than but never 3 times as long as broad.
		1	Antennal scape strongly angulate and usually greatly expanded, the club greatly elongated, at least 3 times as long as broad.
4	Form	0	Form round, oval or oblong-oval.
		1	Form cylindrical, sometimes stoutly so.
5	AnCa	0	Antennal cavities absent.
		1	Antennal cavities situated in anterior prothoracic angles, at least partly closed beneath by prosternal alae.
		2	Antennal cavities situated in anterior prothoracic angles, wholly closed beneath by prosternal alae.
		3	Antennal cavities situated in front of procoxae, next to and nearly always encroaching upon prosternal keel.
		4	Antennal cavities situated in anterior prothoracic angles, or in front of procoxae.
6	ElSt	0	Dorsal elytral striae rarely absent, if so, then at least sutural stria present.
		1	Dorsal elytral stria never present though rather vague impression may be discernible.
7	HeHn	0	Head not produced into 2 horns, though it may be produced as a long pointed rostrum in the female.
		1	Head produced anteriorly into 2 horns of various length.
8	Mand	0	Mandibles moving on the same plane as the long axis of the head.
		1	Mandibles deflexed, moving on a plane at right angle to the long axis of the head.
9	HeSt	0	Head horizontal in repose.
		1	Head vertical in repose.
10	AnSe	0	Antennae consisting of 8 segments and a club.
		1	Antennae consisting of 7 segments and a club.
11	PrAl	0	Anterior margin of prosternal alae without reception of antennal funicle.
		1	Anterior margins of prosternal alae with rather deep longitudinal incisions for the reception of the antennal funicle in repose.
		2	Anterior margin of prosternal alae at most with a very slight notch. Antennal cavities not defined.
12	AnSc	0	Antennal scape normal, neither expanded nor strongly angulate.
		1	Antennal scape expanded and strongly angulate.
13	LaSe	0	Labrum with setigerous punctures
		1	Labrum without setigerous punctures.
14	AnCa	0	Antennal cavities absent.
		1	Antennal cavities situated in anterior prothoracic angles, at least partly closed beneath by prosternal alae.
		2	Antennal cavities completely open, usually situated just anterior to procoxae at middle of hypomera.
15	PtDe	0	Protibiae multidenticulate.
		1	Protibiae oligodenticulate.
16	DoCo	0	Dorsal surface without costae.
		1	Dorsal surface with distinct costae.

are no sufficient differences between these taxa to divide them into the superfamilies. In this study, however, I adopt the superfamily Histeroidea as a good taxon because of sufficient differences in life habit between these groups.

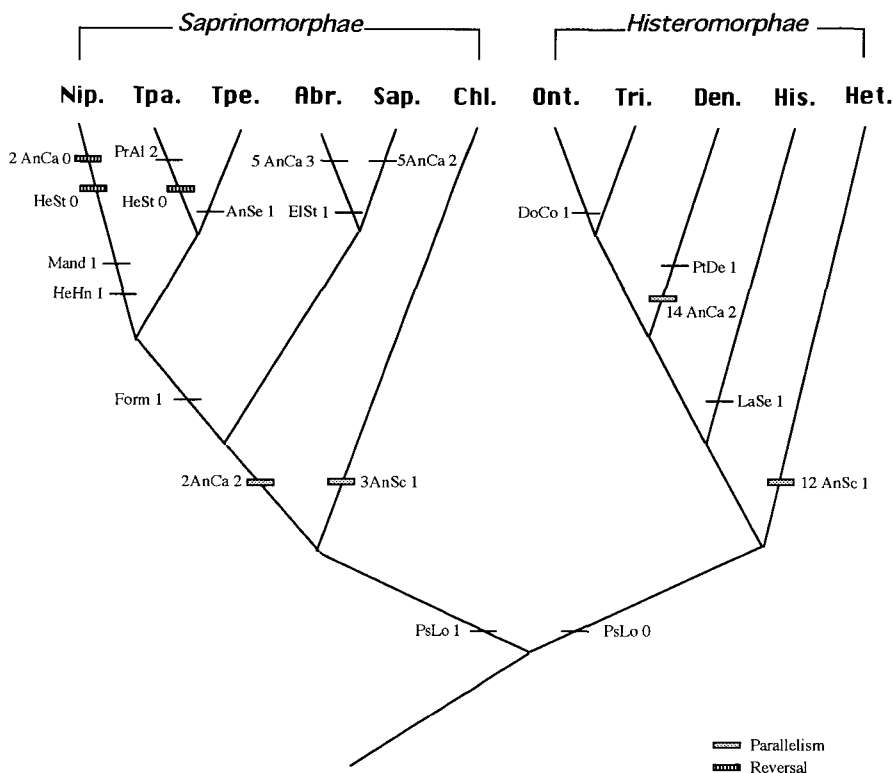


Fig. 35. Wenzel-Mazur System in a cladogram.

The superfamily Histeroidea consists of 3 families, Sphaeritidae, Synteliidae and Histeridae, and is characterized in adult by the compact antennal club, very prominent, acute mandibles, truncate elytra covering 6 abdominal segments at most, ovipositor with scoop-like gonocoxites bearing mesal styli, and carnivorous feeding habit. There is a general agreement on the monophyly of this group and on the derived position of the highly compact Histeridae.

Some authors treated the Niponiinae as a distinct family (Gardner, 1926; Nakane, 1963; Hisamatsu, 1985b). Since Reichardt (1941), however, the majority of the histerid systematists have adopted a system consisting of the 3 families. The phylogenetic relationships among these families have been written fragmentally by some authors. Crowson (1955) stated that the families Sphaeritidae and Synteliidae are more primitive than the Histeridae.

Phylogenetic Relationships of the Subfamilies

Many authors have proposed infrafamilial classifications of the Histeridae (see Historical Review), but no cladograms have yet been published and no studies have been presented with specific intent to distinguish between apotypic and plesiotypic character states.

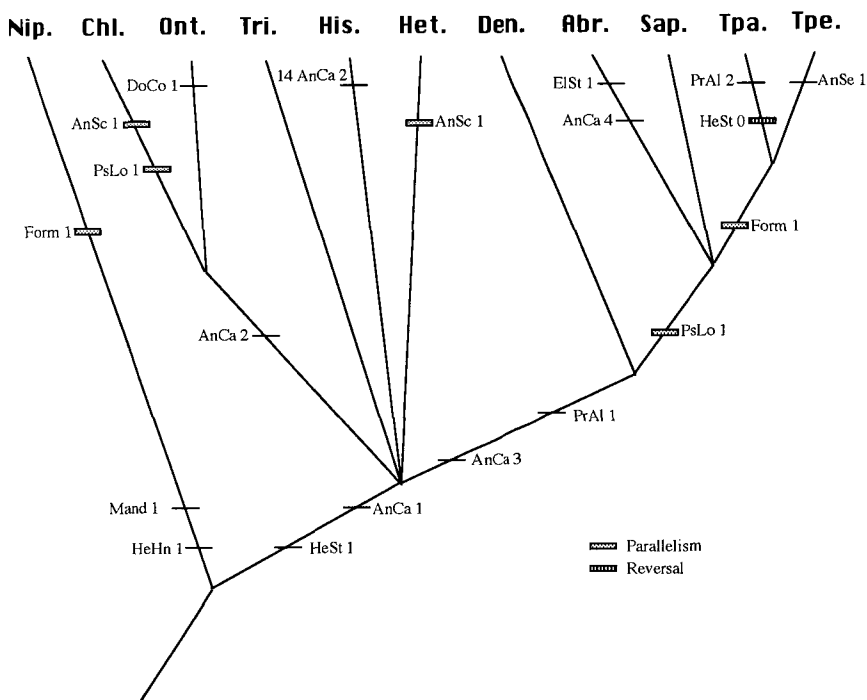


Fig. 36. Cladogram proposed in the present paper.

Since Wenzel (1944) proposed a new system, most authors (Hatch, 1962; Mazur, 1981; Vienna, 1980; Yélamos, 1985 and Hisamatsu, 1985b) have followed him. Mazur (1984a) refined the Wenzel's system in his world catalogue. This revised system, here called "Wenzel-Mazur System", adopts traditional and important character states for constructing phylogeny without evaluating their apotypic-plesiotypic relationships.

The subfamilies are so diverse and distinct that it has been difficult to find additional characters which can be used to construct morphoclines through them. In this section, the character states used in the Wenzel-Mazur System are evaluated first. Then I propose a new cladogram for the subfamilies of the Histeridae.

Wenzel and Mazur System. Wenzel (1944 in Arnett, 1962) and Mazur (1984) did not distinguish between primitive and derived states of the adopted characters. Hence details of the phylogenetic relationships within the family Histeridae are not clear in their system. I have tried to determine polarities (primitive-derived relationships) for their character states, and then applied them to the key branching diagram of the Wenzel-Mazur System.

The character states are given in Table 2. They have been picked up from the key in Wenzel (1944 in Arnett, 1962) and also from a diagnosis given by Olexa (1982). Out-group comparisons have been made to determine polarities between paired states, which are given 0 (primitive) and 1 (derived), sometimes also 2 (more derived), in the

Table 3. Data matrix for subfamilies of Histeridae.

No.		Anc	Nip	Chl	Ont	Tri	His	Het	Den	Abr	Sap	Tpa	Tpe
0	MsWi	0	1	1	1	1	1	1	1	1	1	1	1
9	HeSt	0	0	1	1	1	1	1	1	1	1	0*	1
7	HeHn	0	1	0	0	0	0	0	0	0	0	0	0
8	Mand	0	1	0	0	0	0	0	0	0	0	0	0
5	AnCa	0	0	2	2	1	1	1	3	4	3	3	3
1	PsLo**	0	0	1	0	0	0	0	0	1	1	1	1
11	PrAl	0	0	0	0	0	0	0	1	1	1	2	1
3	AnSc**	0	0	1	0	0	0	1	0	0	0	0	0
4	Form**	0/1	1	0	0	0	0	0	0	0	0	1	1
6	ElSt	0	0	0	0	0	0	0	0	1	0	0	0
10	AnSe	0	0	0	0	0	0	0	0	0	0	0	1
13	LaSe	0	0	0	0	0	1	0	0	0	0	0	0
16	DoCo	0	0	0	1	0	0	0	0	0	0	0	0

Anc: Synteliidae and Sphaeritidae; Nip: Niponiinae; Chl: Chlamydopsinae; Ont: Onthophilinae; Tri: Tribalinae; His: Histerinae; Het: Hetaeriinae; Den: Dendrophilinae; Abr: Abraeinae; Sap: Saprininae; Tpa: Trypanaeinae; Tpe: Trypeticinae.

* Reversal; ** Parallelism.

No. 0, MsWi, code 0: mesosternum between mesocoxae narrower than mesocoxal cavity; code 1: mesosternum between mesocoxae broader than the mesocoxal cavity.

table. The adopted out-groups are Synteliidae (*Syntelia histeroides*) and Sphaeritidae (*Sphaerites politus*). However, Character 2, 5 and 14 could not be determined as to the polarities of their states, though these are arranged with code numbers. Character 5 has 5 states (Code 0 – 4), which may not be in a linear relationship. Character 1, 6, 10 and 13 include negative or reductive states, which are interpreted as derived.

The diagram thus constructed is shown in Fig. 35. It includes 5 cases of homoplasy, 3 of reversal and 2 of parallelism.

However, I do not think that 2 of the indicated cases of reversal are real: Character 2AnCa and 9HeSt in the Niponiinae. The other indicated case is 9HeSt in the Trypanaeinae. Parallelism is indicated for 2 and 14AnCa and 3 and 12AnSc. The case of AnCa may not represent real parallelism. The derived state of AnSc is apparently associated with the myrmecophilous habit in the Chlamydopsinae and Hetaeriinae.

Proposed cladogram. In Section 4 (Morphology and Terms) I examined and compared many external characters, but I could not find any additional characters useful in phylogeny reconstruction at the subfamily level except the mesosternal width.

In Table 3, the mesosternal width and the characters mentioned in Table 2 are arranged against subfamilies, and their states are indicated by code numbers, which are the same as those given in Table 2 (for codes for the mesosternal width see under Table 3). Character 2, 5 and 14 in Table 2 are represented by Character 5, and Character 3 and 12 by Character 3, in Table 3. Based on this data matrix, a cladogram is constructed (Fig. 36). The new cladogram is characterized by the erection of 3 major groups instead of 2 (the Saprinomorphae and the Histeromorphae) in the Wenzel-Mazur System. It is also remarkable in the following interpretations:

1) The Niponiinae are the most primitive subfamily (Character HeSt: Code 0). The 2 supposed reversal states in Fig. 35 are cleared in the new cladogram.

2) Wenzel (1944) recognized the 2 major groups on the basis of Character PsLo. However, the prosternal lobe is present (PsLo: 0) in the Niponiinae, which were

erroneously included in the Saprinomorphae by Wenzel. Moreover, Character AnCa is more weighed than PsLo in the new cladogram; the Dendrophilinae, therefore, are not a histeromorph but a saprinomorph subfamily. In the new cladogram it is postulated that the prosternal lobe was lost in the common ancestral taxon of the Abraeinae, Saprinae, Trypanaeinae and Trypeticinae, and the supposed parallel evolution of 14AnCa Code 3 and 2AnCa 3 is not accepted. After all, the Saprinomorphae and the Histeromorphae, as composed in the Wenzel-Mazur System, are rejected.

3) The Chlamydopsinae are highly adapted to myrmecophilous habit. Their prosternal structures are diversified and sometimes reduced, and it is difficult to conform them to a transformation series. However, their antennal cavities are closed beneath by the prosternal alae, and there is no distinct prosternal keel. They should be placed next to the Onthophilinae and the Tribalinae.

4) The parallel evolution of Character Form (Code 1) may be associated with living in the gallery of scolid beetles, the concerned histerids preying on them.

In the Saprinae and Dendrophilinae the anal vein of the hind wing is distinctly curved at basal 1/3. This may be a common derived state in these subfamilies, supporting the new cladogram. (In the Abraeinae, Trypanaeinae and Trypeticinae the veins of the hind wing are strongly reduced in association with their small body size.) These 2 subfamilies also agree in having a large and triangular gular plate.

6. SYSTEMATICS

Key to the families of the Histeroidea

- 1(4) Hind coxae not separated from each other. Anterior margin of intercoxal disk of mesosternum between mid coxae is narrower than width of mid coxal cavity. Only last abdominal tergite exposed.
- 2(3) Body oblong-oval. Prosternal process short. Striae of elytra finely punctate, not deeply impressed. Family Sphaeritidae
- 3(2) Body oblong. Prosternal keel almost absent, but a tubercle present posteriorly between fore coxae. Striae of elytra deeply impressed. Family Synteliidae
- 4(1) Hind coxae broadly separated from each other. Anterior margin of intercoxal disk of mesosternum between mid coxae is broader than width of mid coxal cavity. Mid coxae broadly separated by mesosternal intercoxal disk. Anepisterna of mesothorax concealed under mid coxa, not visible in ventral view. Last 2 abdominal tergites exposed. Family Histeridae

6. 1. FAMILY SPHAERITIDAE THOMSON, 1862

GENUS SPHAERITES DUFTSCHMIDT, 1805

Sphaerites Duftschmidt, 1805: 205 [type species: *Hister glabratus* Fabricius, 1792: 73]; Lacordaire, 1854: 212; Thomson, 1862: 23; Reitter, 1885: 88; 1909: 246; Ganglbauer, 1899: 415; Jakobson, 1915: 289; Reichardt, 1941: 5; Arnett, 1962: 289; Witzgall, 1971: 189; Hisamatsu, 1985b: 219, pl. 40, no. 1.

Sarapus Fisher-Waldheim, 1821: 39 (nom. nud.).

A good description is given by Arnett (1962).

Nikitsky (1976) described the larva of *Sphaerites glabratus*.

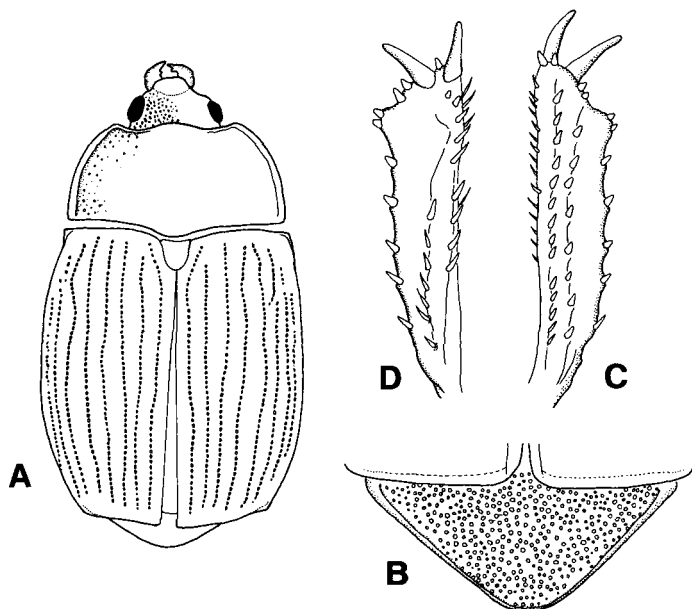


Fig. 37. *Sphaerites politus* Mannerheim. A: Adult, dorsal view. B: Pygidium, dorsal view. C: Right protibia, dorsal view. D: Ditto, ventral view.

Sphaerites politus Mannerheim, 1846
(Fig. 37, 48, 41)

Sphaerites politus Mannerheim, 1846: 514; Kryzhanovskij and Reichardt, 1976: 22; Adachi and Ohno, 1962: 149; Nakane, 1963: 67, pl. 34, no. 1; Matsumoto, 1981: 6 [Mt. Hidaka]; Yasuda, 1982: 76 [Mt. Daisetsu]; Hisamatsu, 1985b: 219, pl. 40, no. 1; Yasuda, 1988: 25.

Japanese name: Emma-mushi-damashi.

Description. Body length, PPL, 4.56 – 5.63 mm (5.14 ± 0.12 , $n=9$), PEL, 4.38 – 5.31 mm (4.99 ± 0.10 , $n=9$). Width, 2.94 – 3.56 mm (3.28 ± 0.07 , $n=9$). Body oblong (Fig. 37A). Cuticle shining and bronze; tarsi and antennae dark rufopiceous. Biometric data are given in Table 4.

Anterior margin of head narrowly marginate laterally between basal corner of epistoma and eye just behind antennal cavity. Surface of head coarsely and densely punctate, the punctures becoming finer and sparser on central area and epistoma.

Anterior margin of pronotum (Fig. 37A) evenly emarginate; lateral sides weakly arcuate on apical 1/2, and nearly straight on basal 1/2; posterior margin strongly arcuate outwards in median 1/3; marginal stria complete laterally, its apical end curved behind apical corner, extended inwards, and attaining to near the lateral 1/3 of pronotum, the stria somewhat distantly present from the pronotal margin; surface sparsely and coarsely punctate laterally, and with other fine punctures intermingled, the fine punctures progressively finer inwardly; on median area of the surface clothed with microscopic punctures.

Epipleura narrow. Marginal epipleural stria complete and carinate. Marginal

elytral stria strongly carinate and complete. Area between the margin of epipleura and the marginal elytral stria shining and sparsely clothed with several microscopic punctures. Elytra (Fig. 37A) each with 10 nearly complete rows of coarse and round punctures, which are separated by 1.5 (1 – 2) times the diameter but irregularly scattered on apical 1/6; intervals among the rows sparsely clothed with microscopic punctures.

Pygidium (Fig. 37B) with marginal stria along lateroposterior margin, the basal end not attaining to the basal corner, curved before the corner and shortly extended inwards; surface of disk densely covered with coarse punctures which are a little coarser than in elytral rows; other fine punctures intermingled among them, becoming sparser apically.

Antennal grooves present on apical area of underside of head, the grooves running obliquely from apex of eyes to middle of head.

Anterior margin of prosternum evenly emarginate, and with long hairs; median area of disk densely covered with coarse setiferous punctures, the setae being somewhat long.

Mesosternum small and quadrangular, its disk densely covered with coarse punctures. Meso-metasternal suture distinctly present. Anterior margin of metasternum behind mesocoxae strongly carinate and marginate; intercoxal disk sparsely covered with fine punctures, the punctures becoming coarser laterally; lateral disk sparsely covered with large, round and shallow punctures. Metepisternum densely punctate, the punctures as large as those of lateral disk of metasternum; on area along the posterior margin transverse stria present, but broadly interrupted on median 1/3, the median end of the stria densely with coarse punctures.

Protibia (Fig. 37D, C) slender, not expanded, usually with 7 denticles on outer margin.

Male genitalia as shown in Fig. 38A – F.

Female genitalia: spermatheca as shown in Fig. 38G.

Specimens examined. [Hokkaidō] 1♂3♀, 1 ex., Mt. Kurodake (Alt. 1900m), Mt. Daisetsu, 18/vii/1981, N. Yasuda (NA); 7 exs., Ditto, 23/vii/1981, N. Yasuda; 4 exs., Ditto, 28/vii/1982, N. Yasuda; 2 exs., Akadake, 16-23/vii/1975, M. Suwa, M. Furukawa, M. Kiuchi and T. Sunose (EIHU). Rishiri Is.: 1 ex., Rishiri Is., 24/vii/1963, Y. Shibata (NSMT); 1 ex., Oniwaki trail, Mt. Rishiri, 7/viii/1992, M. Satō.

Distribution (Fig. 41). Japan (Hokkaidō, Rishiri Is.); North America.

Table 4. Biometric data of *Sphaerites politus* Mannerheim and *Syntelia histeroides* Lewis.

	<i>Sphaerites politus</i>	<i>Syntelia histeroides</i>
APW	1.31-1.63 (1.47±0.03) 9	3.00-4.38 (3.64±0.08) 20
PPW	2.38-2.81 (2.65±0.05) 9	
PL	1.25-1.56 (1.48±0.04) 9	2.50-3.75 (3.15±0.07) 20
EL	2.75-3.75 (3.41±0.09) 9	4.88-6.63 (5.84±0.10) 20
EW	2.94-3.56 (3.28±0.07) 9	3.25-4.75 (4.09±0.08) 20
PyW	1.63-2.00 (1.85±0.04) 9	2.00-3.13 (2.61±0.05) 20
PyL	0.88-1.25 (1.05±0.05) 9	2.13-3.13 (2.61±0.05) 20
PTL	1.13-1.50 (1.33±0.04) 9	1.75-2.50 (2.19±0.05) 20
MSTL	1.25-1.56 (1.35±0.03) 9	1.88-2.50 (2.11±0.04) 20
MITL	1.50-1.94 (1.72±0.05) 9	1.88-2.75 (2.30±0.05) 20

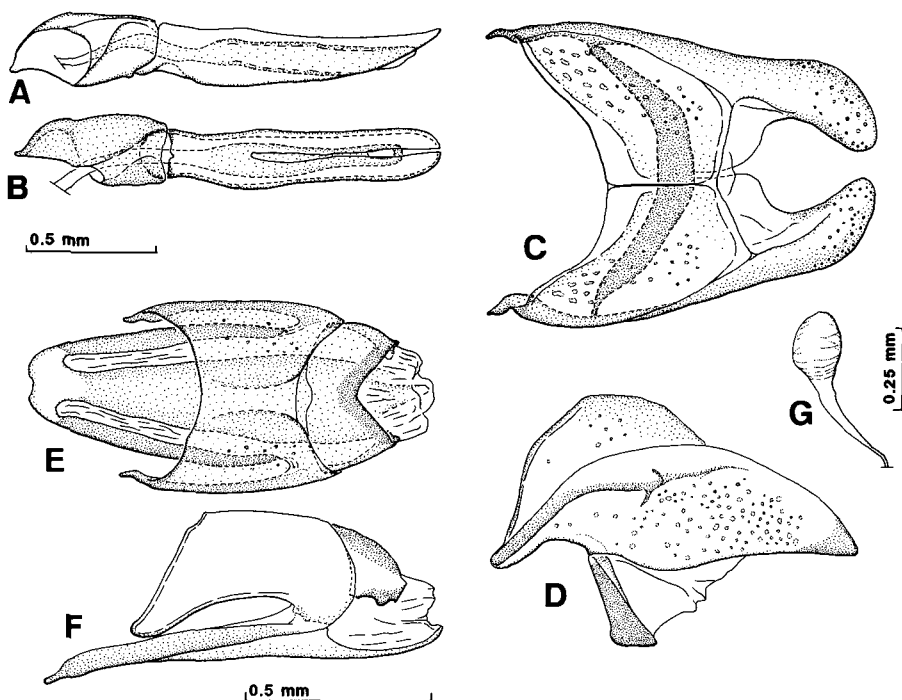


Fig. 38. *Sphaerites politus* Mannerheim. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view. G: Spermatheca.

Remarks. *Sphaerites politus* can rather easily be recognized by the characteristics given in the key to the families.

Little is known about the habitat of this species. This species occurs at high altitudes. Yasuda (1982, 1988) collected it by using pit-fall traps in the forest of *Pinus pumila* at alt. 1800 – 1980 m on Mt. Kurodake, Daisetsu, Hokkaidô.

6. 2. FAMILY SYNTELIIDAE LEWIS, 1882

GENUS SYNTELIA WESTWOOD, 1864

Syntelia Westwood, 1864: 11 [type species: *Syntelia indica* Westwood, 1864]; Reitter, 1876: 18; Sharp, 1891: 439, t. 14, fig. 1, 1b; Kolbe, 1901: 108; Jakobson, 1915: 869; Hetschko, 1926: 13; Yuasa, 1930: 253.

Syntelia histeroides Lewis, 1882

(Fig. 39, 40, 41)

Syntelia histeroides Lewis, 1882: 137 [Japan: Yashiu, Southern Hokkaidô, Kumakawa in Higo, Sado]; Sharp and Muir, 1912: 511, t. 55, fig. 77, 438; Ganglbauer, 1899: 415; Jakobson, 1915: 869; Hetschko, 1926: 13; Matsumura, 1931: 16; Yuasa, 1930: 257; Kryzhanovskij and Reichardt, 1976: 414; Nakane, 1963: 67, pl. 34, no. 2; Hisamatsu, 1985b: 219, pl. 40, no. 2.

Japanese name: Emma-mushi-modoki.

Description. Body length (length between apex of head and apex of pygidium), 11.00 – 16.00 mm (13.60 ± 0.31 , $n=20$). Width, 3.25 – 4.75 mm (4.09 ± 0.08 , $n=20$). Biometric data are given in Table 4. Body (Fig. 39A) cylindrical, somewhat stout. Cuticle shining, black; tarsi and antennae dark rufopiceous.

Head (Fig. 39A) coarsely punctate on a transverse narrow band between eyes and near around eyes, the punctures irregularly scattered and sometimes present posteriorly; surface among the coarse punctures sparsely and evenly clothed with microscopic punctures.

Anterior margin of pronotum (Fig. 39A) densely with short hairs and its median portion slightly arcuate outwards. Sides of pronotum clearly convergent posteriorly, carinate and marginate, the marginal stria curved behind anterior angles and shortly extended inwards, and the posterior ends of the marginal stria extending inwards along posterior margin and united with each other. Surface of pronotum coarsely and densely punctate on a narrow area along the marginal stria, the punctures a little coarser than those of head and several ones scatteringly present on broad lateral area; remain of surface of disk smooth, evenly clothed with microscopic punctures, the punctures being separated by about 7 (5 – 10) times their diameter.

Scutellum (Fig. 39B) longitudinally oblong.

Epipleura of elytra narrow. Marginal epipleural stria feebly carinate and complete. Marginal elytral stria complete, strongly carinate and crenate, and inwardly sinuate on basal 1/4; its basal and apical ends extended inwardly along basal and apical margins of elytra, and the ends united with basal and apical end of sutural stria respectively; area between marginal epipleural and elytral striae with 3 rows of setiferous punctures on

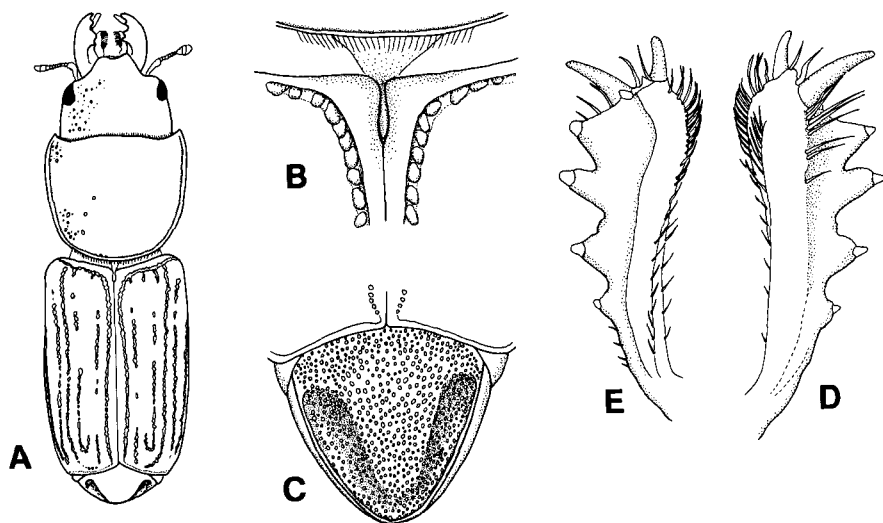


Fig. 39. *Syntelia histeroides* Lewis. A: Adult, dorsal view. B: Scutellum, dorsal view. C: Pygidium, dorsal view. D: Right protibia, dorsal view. E: Ditto, ventral view.

dorsal 1/4, the setae being long and stout. External subhumeral stria (Fig. 39A) complete and densely covered with coarse punctures. Internal subhumeral stria usually present on basal 1/3, but absent on humeral area (nearly basal 1/6). First dorsal stria nearly complete, but abbreviated on basal 1/6 (humeral area) and apical 1/4. Second dorsal stria complete, usually abbreviated on apical 1/6. Third dorsal stria present on apical 1/2, but shortened on apical 1/6, and short rudiments present at base and on median 1/3 of apical 1/2. Fourth dorsal stria absent, sometimes with a short rudiment which consists of 2 or 3 punctures occurring on apical 1/6. Fifth dorsal stria present on about median 1/3, but sometimes shortened apically, and a short rudiment present on apical 1/5. Sutural stria complete. All striae deeply impressed and coarsely punctate. Intervals among the striae sparsely clothed with microscopic punctures.

Pygidium (Fig. 39C) deeply depressed on each lateral side, the basal end of the depression not attaining to the base; its sides strongly carinate; surface densely covered with coarse and deep punctures, and other fine punctures intermingled among coarse ones, these punctures becoming denser and finer basally.

Antennal grooves present on anterior area of underside of head, the grooves strongly carinate basally and running obliquely from anterior margin of eye to apical 1/3 of head on mid line.

Anterior margin of prosternal lobe outwardly cuspidate at middle, and with long hairs; disk of the lobe impunctate. Prosternal process divided into anterior and posterior parts by procoxae; apical 2/3 of the anterior part elevated and with smooth disk, and the basal 1/3 triangular, its basal margins strongly convergent along procoxae, the apical margin of process with 2 or 3 long setiferous punctures; the posterior part short, oblong and impunctate.

Mesosternum moderately convex on median area; surface densely covered with coarse punctures, the punctures becoming denser medially, producing many rugae; area of these rugae clothed with other dense and fine microscopic rugae; area before posterior corner and between mesocoxae impunctate.

Meso-metasternal suture shortly present. Metasternum deeply with an arcuate depression between mesocoxae; intercoxal disk shallow and longitudinally sulcate on longitudinal mid line, and impunctate; lateral disk densely covered with coarse and shallow punctures which are shallower, sparser and finer posteriorly. Metepisternum somewhat sparsely covered with coarse, transversely oblong and shallow punctures which are a little coarser than those of lateral disk of metasternum.

First abdominal sternum densely and coarsely punctate except on medioposterior area. Second - 5th abdominal sterna densely and coarsely punctate laterally.

Protibia (Fig. 39E, D) with 5 denticles on outer margin. Mesotibia with 4 denticles on outer margin, the basal one small. Metatibia with 2 denticles on apical 1/3 of outer margin.

Male genitalia as shown in Fig. 40A – G.

Female genitalia: spermatheca as shown in Fig. 40H.

Specimens examined. [Hokkaidô] 8 exs., Nopporo, 19, 20, 22, 26/vi, 24/vii/1987, M. Ôhara; 1 ex., Ditto, 30/vi/1987, S. Kudô; 10 exs., Eniwa, Izari-gawa, 16/vi/1986, M. Mori; 1 ex., Maruyama, Sapporo, 3/vii/1985, M. Ôhara; 1 ex., Ditto, 22/vi/1940, B. Nishio; 1 ex., Mt. Moiwa, Sapporo, 5/vii/1978, T. Fujisawa; 2 exs., Ditto, 15/vi/1904, no collector's name (NSMT); 1 ex., Heiwa-no-Taki, Sapporo, 2/viii/1977, T. Fujisawa; 2 exs., Ditto, 1/vi/1966, N. Ueda; 1 ♀, Sapporo, 31/v/1976, M. Furukawa; 5 exs., Hakkenzan, Jôzankei, 7/vi/1976, 16/vi/1982, M. Mori; 3 exs., Ditto, 11, 24/vi/1978, T. Fujisawa; 1 ex., Misumai, Sapporo, 10/vi/1979, A. Shinohara (NSMT); 3 exs.,

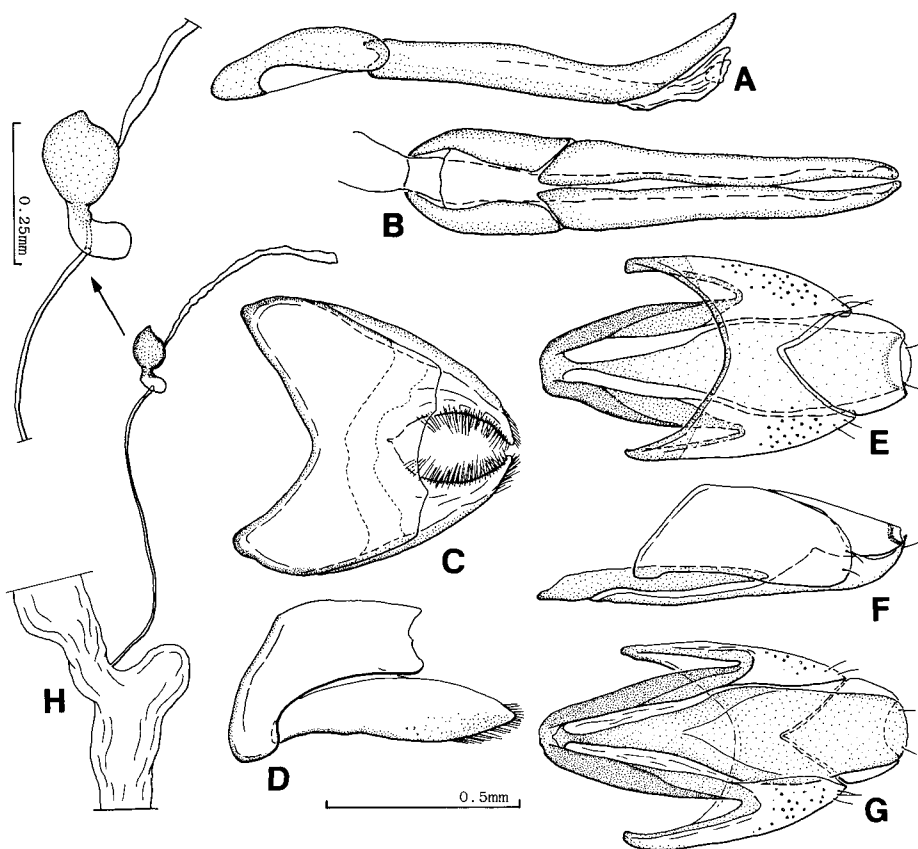


Fig. 40. *Syntelia histeroides* Lewis. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view. G: Spermatheca.

Jōzankei, 17/vi, 13/vii/1985, M. Ôhara; 1 ex., Shikotsu-ko, 6/viii/1971, Y. Doi (NSMT); 1 ex., Enshûrin, Tomakomai, 3/viii/1974, A. Kashizaki; 1 ex., Ditto, 18-30/viii/1978, H. Detani; 2 exs., Okusawa, Otaru, 29/vii/1955, Y. Watanabe; 5 exs., Mt. Yôtei, Hirafu, Kutchan, 15-16, 22/vii/1991, M. Ôhara; 1 ex., Daisengen, 17/vii/1973, T. Ichikawa.

[Honshû] Miyagi-ken: 1 ex., Moriyasu, Akiu-mura, 24/vi/1951, no collector's name (NSMT). Tochigi-ken: 1 ex., Chûzenji, 14/viii/1917, E. Gallois (NSMT). Gumma-ken: 1 ex., Hôshi-Onsen, 6/vi/1953, Y. Kurosawa (NSMT). Saitama-ken: 1 ex., Oku-Chichibu, 24/vii/1940, K. Kojima (NSMT). Nagano-ken: 1 ex., Mt. Yatsu-ga-take, 25/vii/1957, S. Nomura (NSMT); 1 ex., Mt. Chausu-dake, Yokokubo-zawa, 1600 m, S. Jap. Alps, 24/vii/1940, S. Uéno (NSMT).

Distribution (Fig. 41). Japan (Hokkaidô, Honshû, Kyûshû).

Remarks. *Syntelia histeroides* is a distinctive species within the superfamily in its shape and rather large size. It cannot be confused with any other species of the histerids.

This species frequents sap of elm and is sometimes found under the bark. Larva is found under bark.

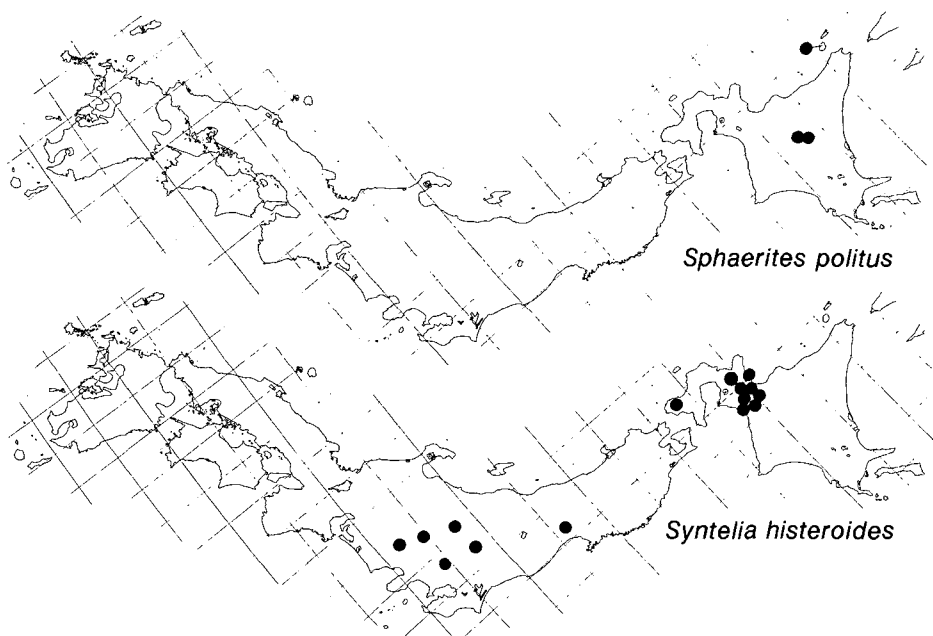


Fig. 41. Collection sites of *Sphaerites politus* and *Syntelia histeroides* in Japan.

6. 3. FAMILY HISTERIDAE GYLLENHAL, 1808

Key to the Japanese subfamilies of Histeridae

- 1(2) Prosternum without antennal grooves or cavities. Ventral side of head with large foveae for reception of antennae. Mandibles vertically connected with head. Subfamily Niponiinae
- 2(1) Prosternum with antennal grooves or cavities. Ventral side of head without foveae (except in Tribes Hololeptini and Histerini, which have shallow and narrow longitudinal grooves). Mandibles correct, horizontally connected with head.
- 3(12) Antennal grooves or cavities on prosternum transverse, occurring on anterior side, and usually closed beneath by the prosternal alae.
- 4(9) Labrum with a few setiferous punctures.
- 5(6) Lateral sides of elytra strongly elevated. Prosternal lobe absent, not distinctly separated from process by prosternal suture. Subfamily Chlamydopsinae
- 6(5) Lateral sides of elytra not elevated. Prosternal lobe present.
- 7(8) Elytra without costa, usually with normal striae or punctures. Subfamily Tribalinae
- 8(7) Elytra with costae. Subfamily Onthophilinae
- 9(4) Labrum without setae.
- 10(11) Antennal scape expanded and strongly angulate. Subfamily Hetaerinae
- 11(10) Antennal scape normal, neither expanded nor strongly angulate. Subfamily Histerinae
- 12(3) Antennal grooves on prosternum longitudinal, usually situated next to prosternal keel, and open beneath.
- 13(14) Prosternal lobe present. Subfamily Dendrophilinae
- 14(13) Prosternal lobe absent.
- 15(18) Body oval or oblong-oval.
- 16(17) Dorsal elytral striae absent though sometimes represented by rather vague impressions. Subfamily Abraecinae
- 17(16) Dorsal elytral striae present. Subfamily Saprinae
- 18(15) Body cylindrical.

- 19(20) Antennae consisting of 8 segments and a club. Head horizontal in repose. Anterior margin of prosternal alae at most only slightly notched. Antennal cavities not distinct. Subfamily Trypanaeinae
- 20(19) Antennae consisting of 7 segments and a club. Head vertical in repose. Anterior margin of prosternal alae with rather deep longitudinal incisions for reception of the antennal funicles in repose. Subfamily Trypeticinae

6. 3. 1. SUBFAMILY NIPONINAE FOWLER, 1912

GENUS NIPONIUS LEWIS, 1885

Niponius Lewis, 1885b: 333 [type species: *Niponius impressicollis* Lewis, 1885b: 333, designated by Gardner, 1935: 4]; Marseul, 1888: 148; Jakobson, 1911: 638, 642; Gardner, 1926: 194; 1935: 2; Reichardt, 1926a: 274; 1941: 66; Schenkling, 1931: 1; Kryzhanovskij and Reichardt, 1976: 76.

Gardner (1935) gave a detailed description of the genus.

Gardner (1930) and Hayashi (1986) described the larva of *Niponius* spp.

Key to the Japanese species of the genus *Niponius*

- 1 (2) Body 4.8 – 5.5 mm long. Pronotum with a deep excavation on each side. Fore foveae on propygidium. *N. impressicollis* Lewis, 1885
- 2(1) Body 3.5 – 4.7 mm long. Pronotum with no deep excavation.
- 3(4) Projection of epistoma short and stout. Propygidium without fovea. *N. obtusiceps* Lewis, 1885
- 4(3) Projection of epistoma long and slender. Propygidium with several excavations.
- 5(6) Projections of epistoma divergent anteriorly. Surface of elytra wholly with rows of punctures. Propygidium with 4 foveae. Antennal grooves very deep under eyes, and other longitudinal foveae present on basal 1/2 of head *N. furcatus* Lewis, 1885
- 6(5) Projections of epistoma parallel to each other. A row of punctures on elytral surface present along sutural line, others not clear. Propygidium with 2 – 4 foveae. Antennal grooves confined to under eyes, without longitudinal deep foveae on basal 1/2 of head. *N. osoriocepus* Lewis, 1885

Another species, *Niponius itoi*, has been recorded from Japan.

Niponius furcatus Lewis, 1885

(Fig. 42, 48)

Niponius furcatus Lewis, 1885b: 333 [Japan, Yuyama]; Gardner, 1926: 3; 1935: 5 [catalogued]; Kryzhanovskij and Reichardt, 1976: 77 [key]; Hisamatsu, 1985b: 219, pl. 40, fig. 4.

Japanese name: Fushi-tsuno-hoso-emma-mushi.

Description. Biometric data are given in Table 5. Body cylindrical, slender. Cuticle shining, black; tarsi, antennae and projection of epistoma dark rufopiceous.

Projections of epistoma moderately stout, long and divergent anteriorly (Fig. 42A, E), their apices strongly carinate and dorsal surface with 2 transverse carinae. Head densely covered with moderate punctures and with several weak rugae on base of the projection, the punctures becoming coarser on basal 2/3, where they are separated by about 2.5 (2 – 3) times their diameter.

Pronotum completely with marginal stria on lateral side, the stria well carinate;

surface densely covered with punctures, the punctures various in size from fine to large (the large punctures are 5 times as large as the fine ones) and becoming finer around margin.

Marginal elytral stria on epipleura of elytra complete and carinate, its basal end extending inwardly along anterior margin of elytron and united with basal end of sutural stria, its apical end attaining to the apical 1/5 of elytron. All dorsal striae absent, but there are rows of coarse and dense punctures; intervals among the rows sparsely covered with coarse punctures, the punctures becoming denser apically.

Propygidium (Fig. 42D) with 4 large, longitudinal oblong, shallow and transversely placed foveae, sometimes these foveae fused; surface sparsely covered with punctures, which are as coarse as elytral ones and separated by about 2.5 (2 – 3) times their diameter. Pygidium (Fig. 42D) with a large, round and shallow fovea behind each basal corner; inside of the fovea sparsely covered with coarse punctures; surface coarsely punctate, the punctures separated by their own diameter and becoming finer and denser apically and laterally.

Antennal grooves deep under the eyes, and deep and longitudinal foveae on basal 1/2 of underside of head (Fig. 42B). Mid line strongly impressed on apical 1/2, but not impressed near the apical margin of the head. Surface of underside of head evenly scattered with fine punctures on apical 1/2; on basal 1/2 very sparsely clothed with fine punctures, the punctures becoming coarser and denser near the basal margin.

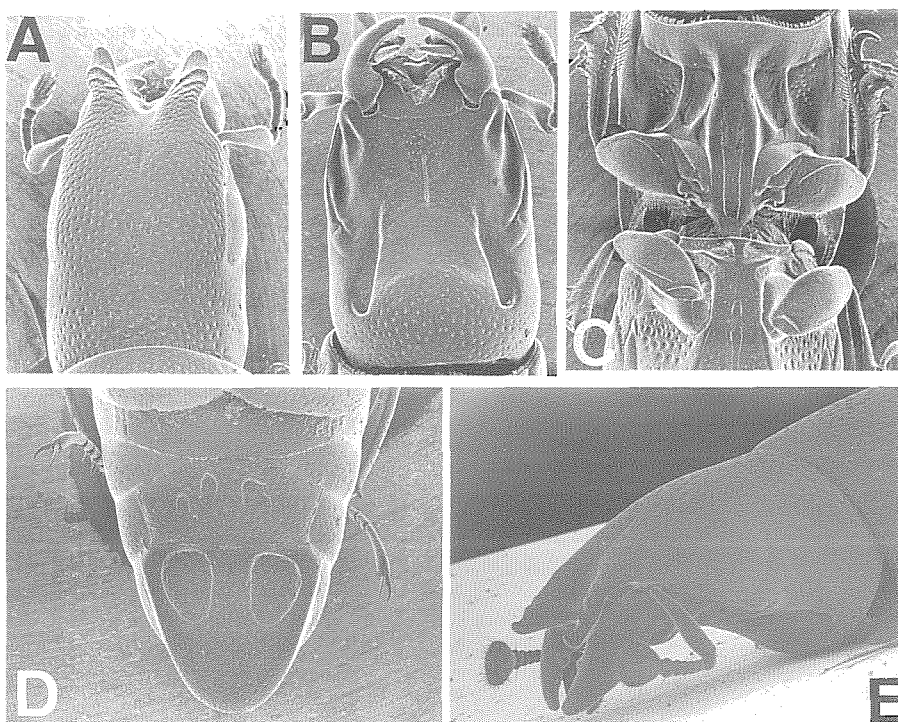


Fig. 42. *Niponius furcatus* Lewis. A: Head, dorsal view. B: Ditto, ventral view. C: Pro-, meso- and metasternum, ventral view. D: Propygidium and pygidium, dorsal view. E: Head, lateral view.

Prosternal lobe (Fig. 42C) transverse and narrow, its anterior margin densely with hairs. Prosternal keel narrow, with carinal stria on basal 3/4, the striae deeply impressed and slightly convergent basally; surface of keel evenly and finely punctate.

Mesosternum longitudinally sulcate on mid line; surface sparsely covered with moderate punctures which are separated by about 2.5 (2 – 3) times their diameter, and with large punctures near basal margin. Meso-metasternal suture well impressed and complete. Metasternum shallowly sulcate on mid line; lateral metasternal striae strongly carinate and divergent posteriorly. Intercoxal disk of metasternum sparsely covered with moderate-sized punctures. Lateral disk densely covered with large, round and shallow punctures on basal 1/3, the punctures becoming finer and sparser posteriorly.

Intercoxal disk of 1st abdominal sternum striate on basal 2/3 on each lateral side, and evenly and moderately punctate, the punctures separated by about 2.5 (2 – 3) times their diameter.

Protibia slender and with 2 denticles on outer margin.

Specimens examined. [Kyûshû] Kagoshima-ken: 1 ♀, Kirishima-Jingû, 9/vi/1981, T. & T. Nakane (NA).

[Nansei Isles] Tokuno-shima Is.: 1 ♀, Mikyô, 25/vii/1963, Y. Kurosawa (NA).

[Kôchi-ken, Shikoku ?]: 1 ex., Wada, Taishô-mura, 4/x/1936, no collectors name, collected from *Tsuga sieboldi*. (NSMT: Kôno collection, No. NSMT-C-23669).

Distribution (Fig. 48). Japan (Shikoku, Kyûshû, Amami-Ôshima Is., Tokuno-shima Is.).

Remarks. *Niponius furcatus* is characterized by the narrow body, the diverse projections of the epistoma and the 4 foveae on the propygidium.

Niponius impressicollis Lewis, 1885
(Fig. 43, 44, 48)

Niponius impressicollis Lewis, 1885b: 333 [Japan, Yuyama, in Higo to Junsai in Yezo (= Kyûshû to Hokkaidô)]; Gardner, 1926: 2; Reichardt, 1929: 274, 273; Gardner, 1935: 5; Reichardt, 1941: 69; Nakane, 1963: 67, pl. 34, fig. 3; Kryzhanovskij and Reichardt, 1976: 77 [key, description]; Hisamatsu, 1985b: 219, pl. 40, fig. 3.

Japanese name: Hosô-emma-mushi.

Table 5. Biometric data of *Niponius furcatus* Lewis and *Niponius impressicollis* Lewis.

	<i>N. furcatus</i>			<i>N. impressicollis</i>		
HOW	0.44-0.48	(0.45±0.010)	2	0.57-0.70	(0.65±0.021)	5
HW	0.73-0.76	(0.75±0.010)	2	1.09-1.25	(1.19±0.026)	5
PW	0.79-0.85	(0.82±0.021)	2	1.30-1.56	(1.46±0.042)	5
PL	1.14	(1.14)	2	1.27-1.66	(1.51±0.067)	5
EL	1.14-1.24	(1.19±0.036)	2	1.61-1.93	(1.77±0.061)	5
EW	0.85-0.89	(0.87±0.016)	2	1.40-1.66	(1.54±0.051)	5
ProW	0.50	(0.50)	2	0.83-0.94	(0.88±0.021)	5
ProL	0.26	(0.26)	2	0.57-0.42	(0.48±0.028)	4
PyL	0.44-0.48	(0.45±0.010)	2	0.73-0.57	(0.64±0.023)	5
PTL	0.56-0.57	(0.56±0.005)	2	1.01-0.88	(0.96±0.025)	4
MSTL	0.48-0.50	(0.49±0.005)	2	0.83-0.78	(0.79±0.011)	4
MTTL	0.47-0.50	(0.48±0.010)	2	0.96-0.78	(0.88±0.033)	4

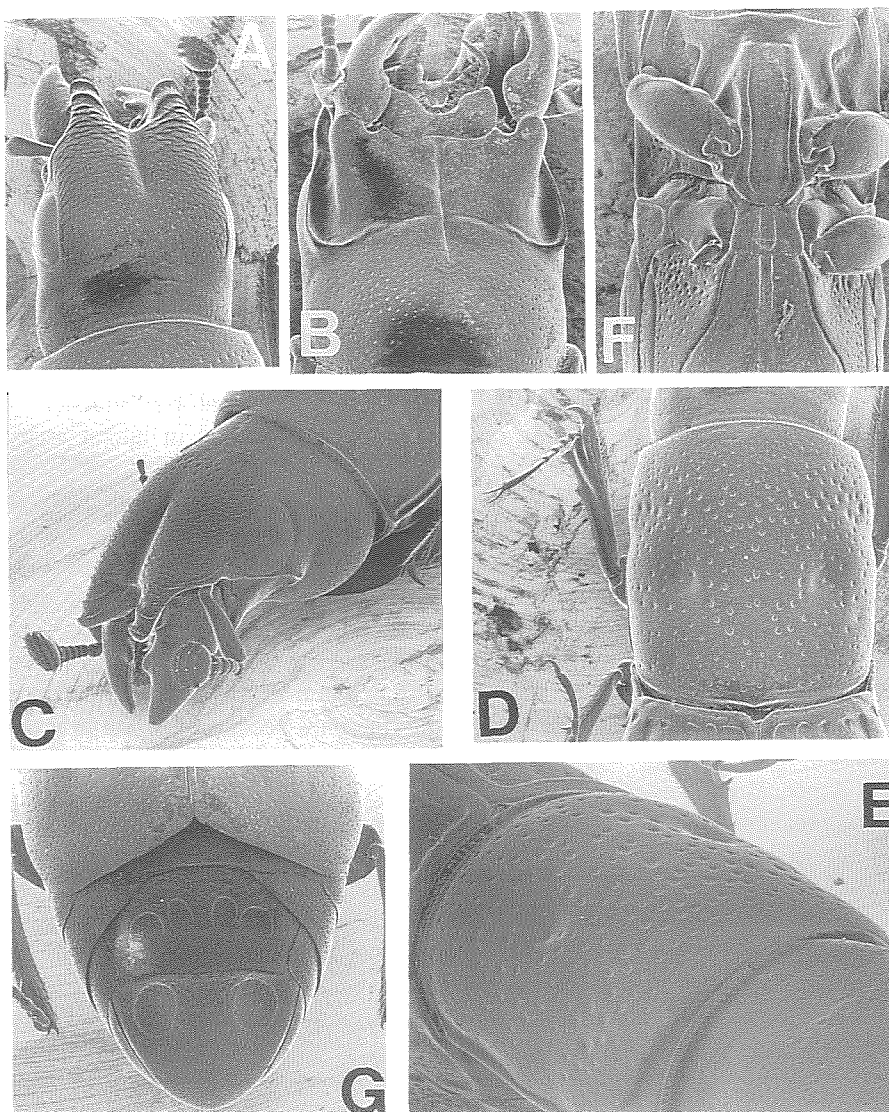


Fig. 43. *Niponius impressicollis* Lewis. A: Head, dorsal view. B: Ditto, ventral view. C: Ditto, frontal view. D: Pronotum, dorsal view. E: Ditto, dorso-oblique view. F: Pro-, meso- and metasternum, ventral view. G: Propygidium and pygidium, dorsal view.

Description. Biometric data are given in Table 5. Body cylindrical, moderately stout. Cuticle shining, black; tarsi, antennae and projection of epistoma dark rufopiceous.

Projections of epistoma (Fig. 43A, C) moderately stout and long, their apices strongly carinate and dorsal surface with 2 or 3 transverse carinae. Head densely with transverse rugae on apical 1/3; median 1/3 of the surface sparsely covered with moderate punctures, the punctures separated by about 3.5 (2 – 5) times their diameter, with other fine punctures intermingled; basal 1/3 finely and sparsely punctate;

depression on mid line deeply present on apical 1/2.

Pronotum completely with marginal stria on lateral side, the stria strongly carinate; surface with an excavation (Fig. 43D, E) on each mediolateral side, and sparsely covered with large, round and deep punctures which are irregularly scattered, and with other fine punctures sparsely intermingled among the large ones.

Epipleura of elytra completely with marginal elytral stria, which is carinate and of which the apical end attains to the apical 1/5; area between epipleural margin and elytral marginal stria impunctate and extremely finely strigate. First dorsal stria present on basal 1/4 and strongly carinate, its basal end deeply excavate. Second – 5th dorsal striae almost obsolete, being represented by rows of coarse punctures. Sutural stria strongly impressed and represented by a row of longitudinal coarse punctures on basal 2/3. Surface of elytra somewhat convex on humeral area, and deeply and transversely excavated near the basal margin; represented by rows of coarse punctures; intervals among the rows sparsely clothed with fine punctures on basal 1/2, and densely on apical 1/2, the punctures becoming coarser on apical 1/3, and in lateral area these punctures somewhat much denser.

Propygidium (Fig. 43G) with 4 large, round, shallow and transversely placed foveae which become shallower posteriorly; surface sparsely covered with coarse punctures, which are as coarse as elytral ones, and other fine punctures densely intermingled among the coarse ones. Pygidium (Fig. 43G) with a large, round, and somewhat deep fovea behind each basal corner; inside of the fovea sparsely and moderately punctate; surface coarsely punctate on median area, the punctures separated by 3 – 4 times their diameter and becoming finer anteriorly, and other fine punctures sparsely intermingled among coarse ones, the fine ones becoming denser apically and laterally.

Antennal grooves (Fig. 43B) deep under eyes. Mid line of underside of head deeply excavate, its basal end beyond transverse line. Surface of underside of head shining, sparsely and finely punctate on apical 1/2, and evenly clothed with fine punctures which are separated by about 2.5 (2 – 3) times their diameter on basal 1/2.

Prosternal lobe (Fig. 43F) transverse and narrow, its anterior margin densely with hairs. Prosternal keel completely with 2 carinal striae, of which the basal ends are united with each other in an arch; surface of keel evenly punctate as basal 1/2 of head.

Mesosternum longitudinally and shallowly sulcate on median 1/3; lateral 1/3 evenly punctate as basal 1/2 of head and extremely finely strigate; sometimes lateral marginal stria present on basal 1/2 at each anterior corner. Meso-metasternal suture well impressed and complete. Metasternum longitudinally and shallowly sulcate on mid line; lateral metasternal striae strongly carinate and divergent posteriorly. Intercoxal disk of metasternum sparsely and coarsely punctate, the punctures twice as coarse as mesosternal punctures, and other fine ones sparsely intermingled among them. Lateral disk sparsely covered with large punctures, the punctures becoming finer apically.

Intercoxal disk of 1st abdominal sternum deeply striate on basal 3/4 on each lateral side, and punctate as intercoxal disk of metasternum, but the punctuation is much denser.

Protibia slender and with 2 denticles on outer margin.

Male genitalia as shown in Fig. 44.

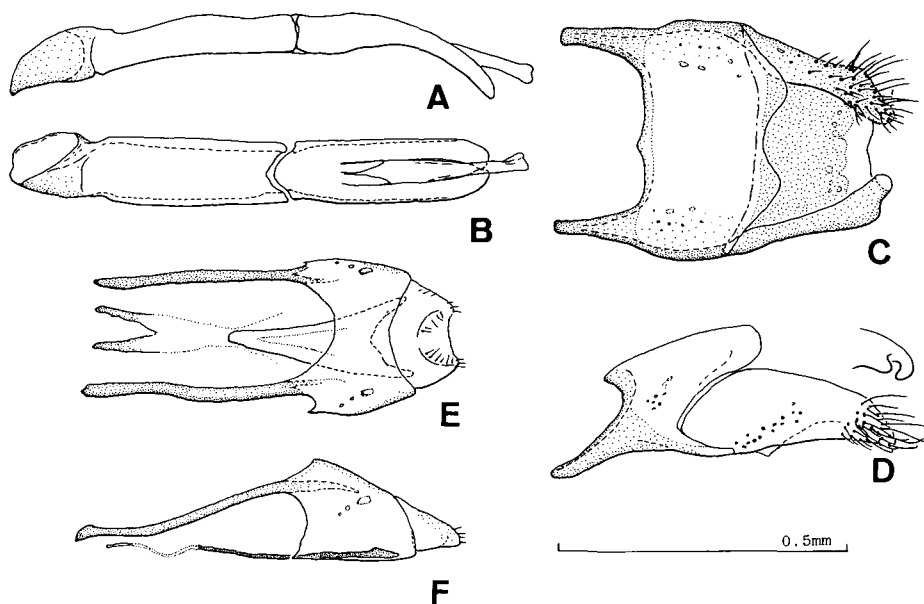


Fig. 44. *Niponius impressicollis* Lewis A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

Specimens examined. [Honshû] Fukushima-ken: 2 exs., Yunohana, Tateiwa V., Minami-Aizu, 19/vi/1947, Y. Kurosawa (NA); 4 exs., Onozawa, Egawa, Minami-Aizu, 17/vi/1950, Y. Kurosawa (NSMT). Mie-ken: 2 exs., Mimune, 18-21/vi/1955, H. Ôhira (NA). Hiroshima-ken: 2♂♂, Sandankyô, Aki, 7-8/viii/1966, S. Ôsawa (NA).

Distribution (Fig. 48). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Taiwan; Ussuriyskiy Kray; China.

Remarks. *Niponius impressicollis* is the largest species of the genus in Japan. It can easily be recognized by its size and the presence of excavations on the pronotum.

This species is found from the galleries of a scold beetle, *Hylesinus striatus* Egg. on ash, *Fraxinus mandchuria* (Kryzhanovskij and Reichardt, 1976).

Niponius itoi Chûjô, 1955

Niponius itoi Chûjô, 1955: 57 [Japan, Adera, Ôkuwa-mura, Nishichikuma-gun, Nagano pref., Honshû]; Hisamatsu, 1985b: 220 [= ? *Niponius osorioceps* Lewis].

Japanese name: Itô-hoso-emma-mushi.

Specimens examined. No specimens of the species have been available for my study.

Distribution. Japan (Honshû).

Remarks. Judging from the original description this species is apparently similar to *N. osorioceps*, but it is distinguished from the latter by the smaller body size. I have been unable to trace it in the Chûjô collection. According to Hisamatsu (1985b), this species is probably a synonym of *N. osorioceps*.

Niponius obtusiceps Lewis, 1885
(Fig. 45, 48)

Niponius obtusiceps Lewis, 1885b: 334 [Japan, Oyayama near Kumamoto in Higo, and Ishikari river in Yezo in 1883]; Gardner, 1926: 3; Reichardt, 1929: 275; Gardner, 1935: 5, t. 1, fig. 2; Reichardt, 1941: 69; Kryzhanovskij and Reichardt, 1976: 78; Hisamatsu, 1985b: 220 [key].

Japanese name: Tsuno-buto-hoso-emma-mushi.

Description. Body cylindrical, moderately stout. Cuticle shining, black; tarsi, antennae and projections of epistoma dark rufopiceous.

Projections of epistoma (Fig. 45 A, C) stout and long, their dorsal surface with 2 transverse carinae. Apical 1/3 of head densely covered with fine punctures and weak transverse rugae, the punctures becoming sparser and coarser posteriorly; median 1/3 of the surface coarsely punctate, the punctures being separated by about 1.5 (1 – 2) times their diameter; basal 1/3 with much smaller punctures than on median 1/3, the punctures being separated by 4 (3 – 5) times their diameter; depression on mid line deep on apical 1/4.

Pronotum completely with marginal stria on lateral side, the stria strongly carinate; surface irregularly scattered with deep, large and somewhat longitudinal oblong punctures (Fig. 45D) and other fine punctures intermingled among the large ones.

Epipleura of elytra completely with marginal elytral stria, which is carinate and of which the apical end attains to near the posterior margin of elytron; area between epipleural margin and elytral marginal stria impunctate and extremely finely strigate. All dorsal and sutural striae represented by rows of large punctures, the rows obsolete and their punctures becoming finer on apical 1/3; intervals among the rows impunctate on basal 2/3, but sometimes sparsely with several fine punctures, which are as large as the pronotal fine ones, separated by about 1.5 (1 – 2) times the diameter and become denser and finer posteriorly. Surface of elytra weakly convex on humeral area, and with a deeply transverse excavation on near the basal margin.

Propygidium (Fig. 45F) without large foveae, and sparsely covered with coarse punctures which are twice as large as fine punctures of elytra, and other fine punctures densely intermingled among the coarse ones. Pygidium (Fig. 45F) with large, semicircular and deep foveae on basal 2/3 on lateral area; area inside fovea sparsely and finely punctate; surface between foveae sparsely covered with coarse punctures and intermingled fine ones among the coarse ones; fine punctures present also on apical 1/3 and along the margin.

Antennal grooves divided into 2 parts; a deep furrow under eyes, and an oblong fovea on basal 1/2 of underside of head (Fig. 45B); surface of the groove densely clothed with fine punctures on apical 1/2, the punctures much sparser on basal 1/2.

Prosternal lobe (Fig. 45E) transverse and narrow, its anterior margin densely furnished with hairs. Prosternal keel completely with 2 carinal striae, of which the basal ends are united with each other in an arch; surface of keel sparsely clothed with fine punctures.

Mesosternum longitudinally and shallowly sulcate on median 1/3; area of lateral 1/3 sparsely clothed with several fine punctures. Meso-metasternal suture absent. Metasternum longitudinally, broadly and shallowly sulcate on mid line; lateral

metasternal stria strongly carinate, its apical end extending posteriorly, and attaining to near apical 1/4 of metasternum. Intercoxal disk of metasternum sparsely covered with coarse and longitudinal oblong punctures. Lateral disk densely covered with coarse and round punctures, which are a little coarser than those of intercoxal disk, the punctures becoming sparser along the lateral metasternal stria.

Intercoxal disk of 1st abdominal sternum deeply striate on each lateral side, the striae nearly complete, but not attaining to the apical margin; surface densely and finely punctate, the punctures progressively sparser and finer posteriorly.

Protibia slender and with 3 denticles on outer margin.

Specimens examined. [Honshū] Tōkyō-to: 1 ex., Mt. Takao, 19/ii/1981, K. Horie. Fukui-ken: 1 ♀, Ikegahara, Ōno-shi, 20/vi/1988, M. Saitō.

Distribution (Fig. 48). Japan (Honshū).

Remarks. *Niponius obtusiceps* can readily be recognized by the absence of fovea on the propygidium and the short and stout projections of the epistoma.

No details are known about the habitat of this species. Specimens were collected under bark. Hisamatsu (1985b) noted that this species was found in tunnels made by cossonine beetles, Curculionidae.

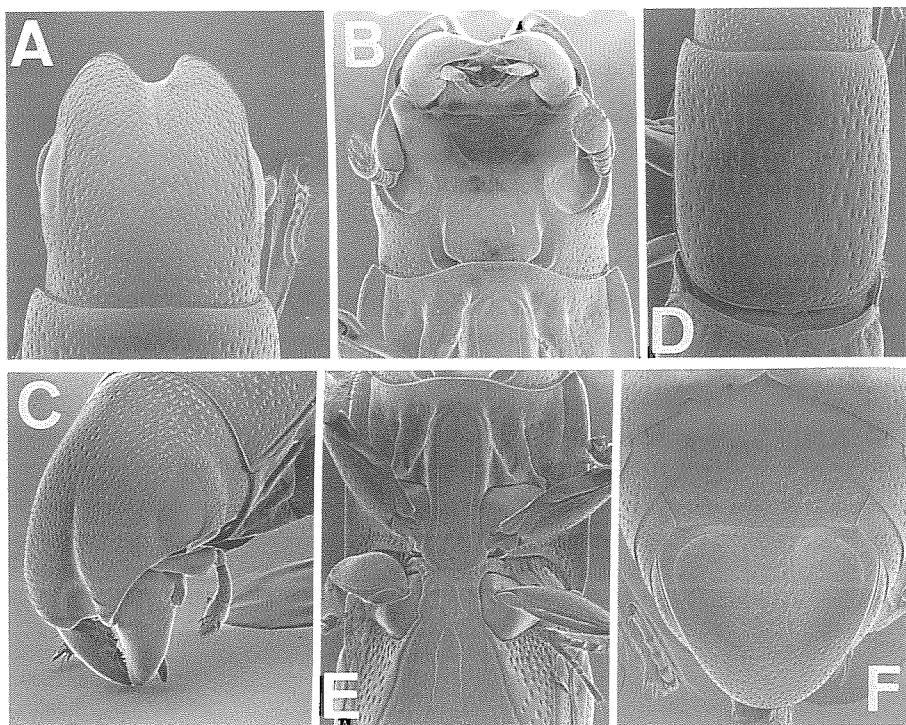


Fig. 45. *Niponius obtusiceps* Lewis. A: Head, dorsal view. B: Ditto, ventral view. C: Ditto, lateral view. D: Pronotum, dorsal view. E: Pro-, meso- and metasternum, ventral view. F: Propygidium and pygidium, dorsal view.

Niponius osorioceps Lewis, 1885
(Fig. 46, 47, 48)

Niponius osorioceps Lewis, 1885b: 333 [Japan, Higo, Yuyama and Konose], pl. 8, fig. 12-14; Gardner, 1935: 3; Nakane, 1963: 67, pl. 34, fig. 4 [noted, photo]; Hisamatsu, 1985b: 219, 220, pl. 40, fig. 5.

Niponius osorioceps (sic): Jakobson, 1911: 642; Reichardt, 1929: 274; Kryzhanovskij and Reichardt, 1976: 78.

Japanese name: Hime-hoso-emma-mushi.

Description. Biometric data are given in Table 6. Body cylindrical, moderately stout. Cuticle shining, black; tarsi, antennae and projections of epistoma dark rufopiceous.

Projections of epistoma (Fig. 46A, C, D) moderately stout and long, their apices strongly carinate and dorsal surface with 2 transverse carinae. Apical 1/3 of head densely covered with transverse rugae; median 1/3 evenly and coarsely punctate, the punctures being separated by their own diameter; basal 1/3 densely covered with coarse punctures, which are a little coarser than the median ones; depression on mid line present and shallow on apical 1/3.

Pronotum completely with marginal stria on lateral side, the stria strongly carinate; surface covered with coarser punctures which are as coarse as those on the basal 1/3 of the head, the punctures being separated by about 1.5 (1 – 2) times the diameter.

Epipleura of elytra completely with marginal elytral stria, which is strongly carinate and of which the apical end attains to near the apical 1/5; area between epipleural margin and elytral marginal stria impunctate and extremely finely strigate. All dorsal striae represented by rows of moderate punctures, the rows obscure and not clear, and their punctures a little finer than the pronotal ones and irregularly intermingled with punctures of intervals; intervals among the rows sparsely covered with moderate punctures, the punctures becoming denser laterally and apically. Sutural stria represented by a somewhat clear row of coarse and deep punctures. Surface of elytra with a deep and transverse excavation on near the basal margin.

Propygidium (Fig. 46E) with 2 large, transverse oblong, or 4 longitudinal oblong, and shallow foveae which become shallower posteriorly; surface densely covered with moderate punctures, the punctures becoming sparser on area between the foveae. Pygidium (Fig. 46E) with large, longitudinal oblong and deep foveae behind each basal corner; area inside foveae sparsely covered with moderate punctures; surface between foveae coarsely punctate, the punctures being separated by about 2.5 (2 – 3) times their diameter, and other moderate punctures sparsely intermingled among the coarse ones, all these punctures becoming finer and denser apically and laterally.

Antennal grooves (Fig. 46B) deep under eyes. Surface of underside of head sparsely clothed with fine punctures, the punctures separated by about 3 (2 – 4) times their diameter and becoming denser basally and laterally.

Prosternal lobe (Fig. 46F) transverse and narrow, its anterior margin densely with hairs. Prosternal keel completely with 2 carinal striae, which are strongly carinate and slightly convergent basally.

Mesosternum longitudinally and shallowly sulcate on mid line, its disk sparsely and finely punctate. Meso-metasternal suture clearly impressed. Metasternum

longitudinally, shallowly and completely sulcate on mid line; lateral metasternal stria strongly carinate and divergent posteriorly, its apical end extending to near the hind coxa. Intercoxal disk of metasternum sparsely clothed with fine punctures, the punctures being separated by about 3.5 (2 – 5) times their diameter, and becoming denser and a little coarser on apical 1/4. Lateral disk irregularly scattered with large, round and deep punctures on basal 1/3, the punctures becoming finer apically and along the metasternal lateral stria.

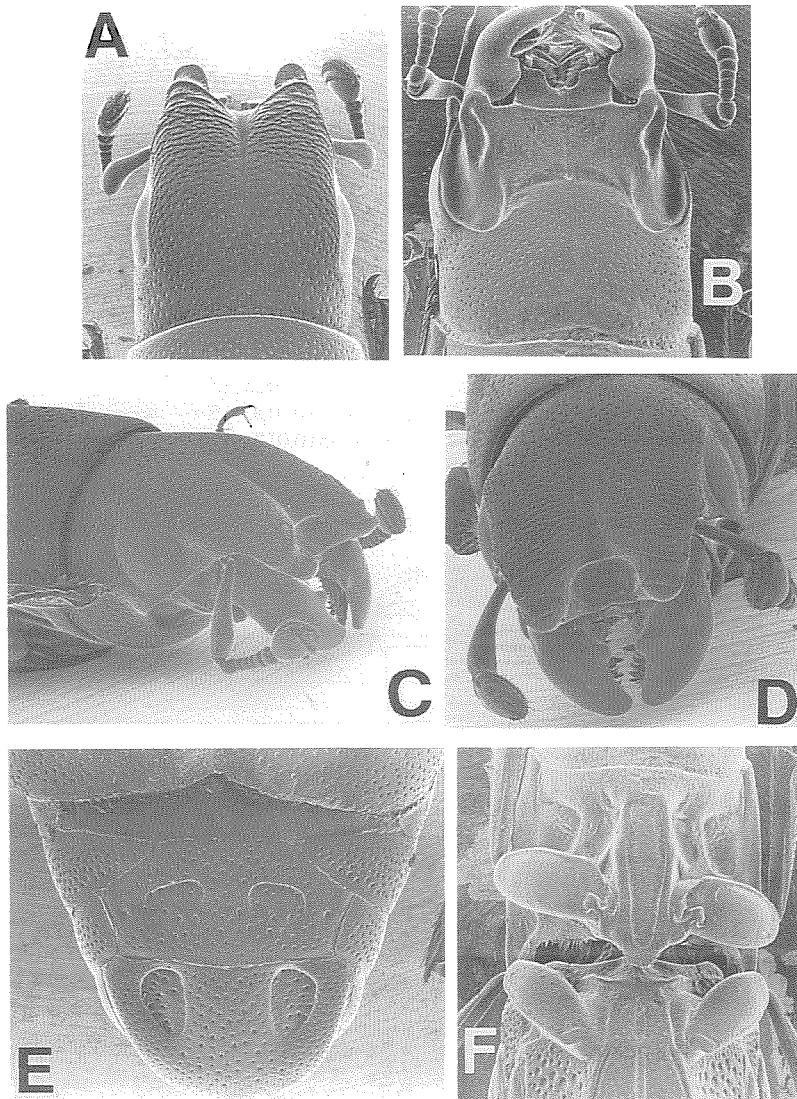


Fig. 46. *Niponius osorioceps* Lewis. A: Head, dorsal view. B: Ditto, ventral view. C: Ditto, lateral view. D: Ditto, frontal view. E: Propygidium and pygidium, dorsal view. F: Pronotum, dorsal view.

Intercoxal disk of 1st abdominal sternum deeply striate on lateral sides, the striae nearly complete and strongly divergent posteriorly; surface densely and moderately punctate, the punctures as large as those on apical 1/4 of intercoxal disk of metasternum and separated by about 1.5 times the diameter; surface among the punctures extremely finely strigate.

Protibia slender and with 3 denticles on outer margin.

Male genitalia as shown in Fig. 47.

Specimens examined. [Hokkaidô] 2 exs., Gamushi, 10/v/1956, A. Nobuchi.

Table 6. Biometric data of *Niponius osorioiceps* Lewis.

HOW	0.58-0.50	(0.53±0.006)	18
HW	0.96-0.75	(0.89±0.012)	19
PW	1.15-0.92	(1.04±0.015)	18
PL	1.29-1.02	(1.15±0.017)	19
EL	1.61-1.20	(1.43±0.024)	19
EW	1.24-0.96	(1.14±0.019)	18
ProW	0.75-0.53	(0.65±0.013)	18
ProL	0.41-0.26	(0.35±0.009)	17
PyL	0.61-0.44	(0.53±0.013)	17
PTL	0.73-0.61	(0.67±0.012)	15
MSTL	0.70-0.53	(0.64±0.013)	15
MTTL	0.76-0.58	(0.68±0.012)	17

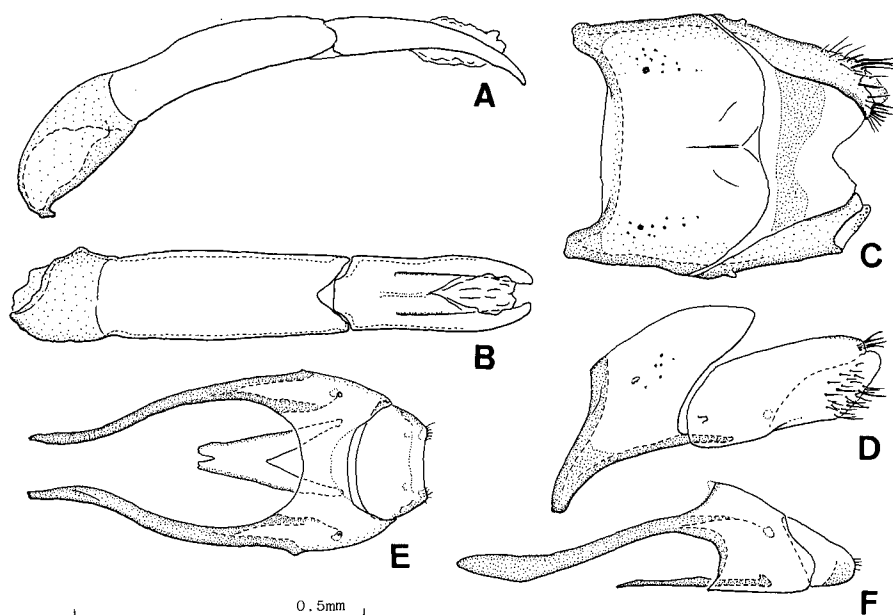


Fig. 47. *Niponius osorioiceps* Lewis. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

[Honshû] Fukushima-ken: 1 ♀ and 7 exs., Yunohana, Tateiwa, Minami-Aizu, 15/vi, 18-20/vii/1947, Y. Kurosawa (NA); 2 exs., Ditto, 9/vii/1948, T. Nakane (NA); 1 ex., Onozawa, Egawa, Minami-Aizu, 2/vi/1951, Y. Kurosawa (NSMT); 1 ex., Ditto, 17/vi/1950, Y. Kurosawa (NSMT). Yamagata-ken: 1 ex., Ôwisawa, 28/vi/1960, Y. Kurosawa (NSMT); 1 ex., Ôishi, Oguni, 9/vi/1969, K. Shirahata (NSMT). Tochigi-ken: 1 ex., Utsunomiya, 6/v/1968, H. Takizawa. Saitama-ken: 1 ex., Chichibu, Musashi, 17/vi/1913, H. Takabayashi (NA). Tôkyô-to: 2 exs., Hikagesawa, Mt. Takao-san, 4/v/1975, K. Kawada; 1 ex., Ditto, 21/vi/1963, S. Nomura (NSMT); 1 ex., Hikawa, Okutama, 13/v/1951, K. Umeyama (NSMT). Kanagawa-ken: 11 exs., Mt. Ôyama, 5/v/1989, H. Takizawa; 1 ex., Sôun-zan, 29/v/1988, H. Takizawa. Nagano-ken: 1 ex., Yatsu-ga-take, 14/vii/1951, J. Suzuki (NSMT). Shizuoka-ken: 1 ex., Izu, Inatori, 6/v/1973, H. Takizawa; 1 ex., Mt. Amagi-san, 5/v/1956, S. Tsuyuki (NSMT). Niigata-ken: 1 ex., Kurokawa, northern Echigo, 9/vi/1963, K. Baba. Gifu-ken: 1 ex., Nara-Tôge, 4/vii/1953, H. Torigai (NA). Shiga-ken: 1 ex., Bomura, 15/vi/1957, T. Nakane (NA). Kyôto-fu: 1 ex., Serio, 29/v/1954, T. Nakane (NA). Tottori-ken: 1 ex., Daisen, 9/vii/1951, N. Yato (NA).

[Kyûshû] Kagoshima-ken: 1 ex., Iriki, Aira-gun, 10/v/1984, T. & T. Nakane (NA).

Distribution (Fig. 48). Japan (Hokkaidô, Honshû, Kyûshû); Ussuriyskiy Kray.

Remarks. *Niponius osorioceps* is characterized by the long and slender projections of the epistoma and the presence of 2 – 4 foveae on the propygidium.

This species is known as a predator of the bark beetle *Phloeosinus perlatus* Chapuis, Scolytidae.

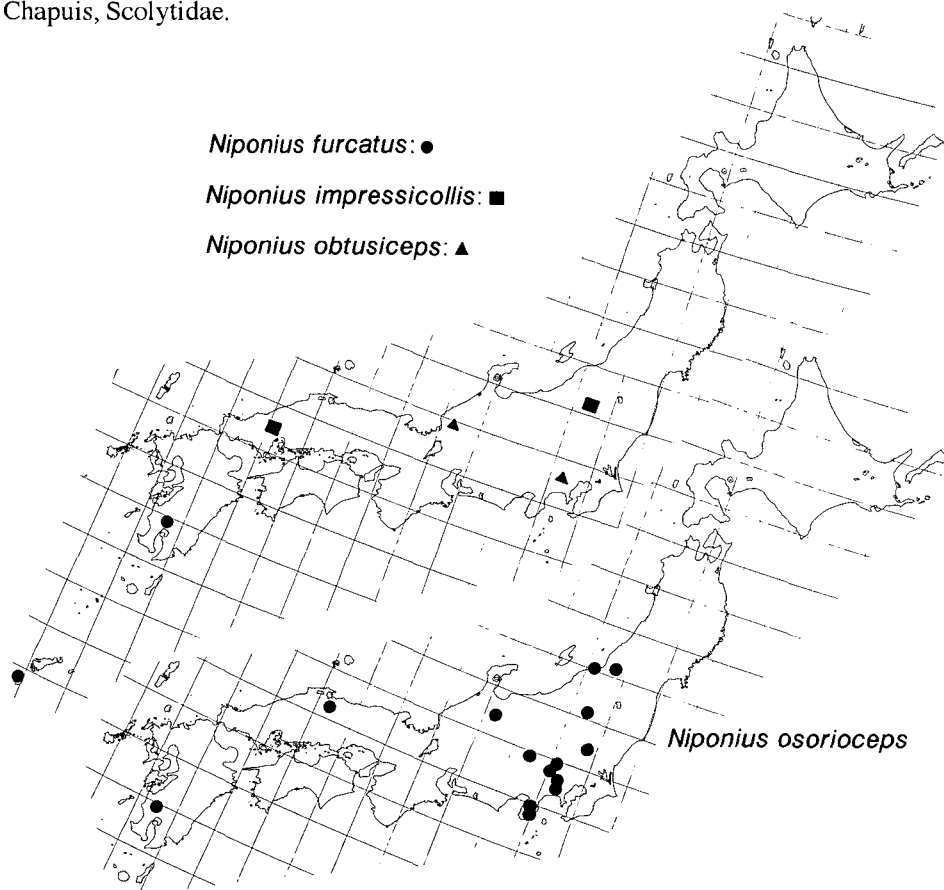


Fig. 48. Collection site of *Niponius* spp. in Japan.

6. 3. 2. SUBFAMILY CHLAMYDOPSINAE BICKHARDT, 1917

GENUS EUCURITOPSIS SILVESTRI, 1926

Eucuritopsis Silvestri, 1926: 265 [type species, *Eucuritopsis mirabilis* Silvestri, 1926: 268, originally designated].

Boreochlamydus K. Sawada, 1994: 357 [type species, *Boreochlamydus ohtanii* K. Sawada, 1994: 359], new synonym.

Description. Characterized by unique shape of pronotum and elytra. Medio-apical portion of pronotum strongly elevated. Elytral lateral ridge strongly elevated and interrupted transversely medially; the inside of the interrupted portion furnished densely with waxed hairs.

Comments. The genus is a small one containing 2 species, *E. mirabilis* Silvestri, 1926 from Taiwan and *E. ohtanii* (K. Sawada, 1994) from Japan. Species of this genus occur in the nest of ants. *E. mirabilis* is collected from the nest of *Formica legi*.

Sawada (1994) described the new genus *Boreochlamydus*. But he did not compare it with *Eucuritopsis*.

Eucuritopsis ohtanii (K. Sawada, 1994).
(Fig. 49)

Eucuritopsis sp.: Nishikawa and Maruyama, 1993: 230 [Zama, Kanagawa, Honshû].

Boreochlamydus ohtanii K. Sawada, 1994: 359 [Mt. Sobo, Ôita, Kyûshû; Mt. Gozaisyo, Mie, Honshû].

Japanese name: Arinosu-kobu-emma-mushi.

Description. Body oblong, reddish brown, shining and furnished with yellow hairs. Body length, width and biometric data are as follows (male: M, n=1; female: F, n=1): PPL, M 1.84, F 2.06; PEL, M 1.79, F 1.88; APW, M 0.69, F 0.71; PPW, M 0.86, F 0.91, PL, M 0.74, F 0.66, EL, M 1.10, F 1.23, EW, M 1.37, F 1.39, ProW, M 0.66, F 0.71, ProL, M 0.34, F 0.39, PyL, M 0.34, F 0.39, PTL, M 0.54, F 0.49, MSTL, M 0.51, F 0.46, MTTL, M 0.54, F 0.49.

Frontal lateral margins (Fig. 49A) parallel and carinate; disk densely covered with coarse, round punctures. Labrum semicircular. Mandible short and robust. Scape of antenna large, thick and triangular in frontal view, and coarsely and densely punctate.

Pronotal sides (Fig. 49B) feebly convergent apically, the basal 1/4 slightly emarginate to fit fore femur in repose; anterior angle strongly emarginate; disk convex, the medio-apical area strongly elevated and on the mid line feebly depressed; surface densely covered with round, large and deep punctures, sparsely intermingled with fine punctures among the large ones, and densely furnished with yellow long hairs; posterior margin angulate at middle.

Epipleura flat. Epipleural marginal stria strongly sinuate medially, the apical end extending across elytral apex to medio-apical angle of elytron and united with the apical end of the sutural stria. Elytral marginal stria absent. Elytron (Fig. 49B) with lateral margin raised into a narrow, prominent ridge on lateral 1/3; the ridge narrowly interrupted medially; furnished with waxed hairs inside the median interrupted portion; surface of the basal 1/2 of the ridge with a narrow elevated carina; mediobasal 1/2 of the

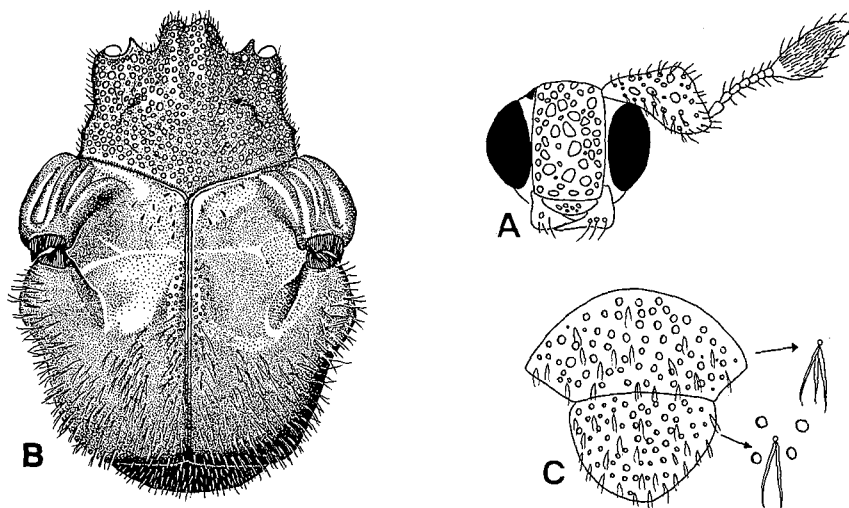


Fig. 49. *Eucuritopsis ohtanii* (K. Sawada). A: Head, frontal view. B: Pronotum and elytra, dorsal view. C: Propygidium and pygidium.

elytral disk depressed, shining and sparsely furnished with short and thick hairs basally; apical 1/2 of the disk convex and evenly covered with coarse, setiferous punctures, which are separated by about their own diameter, except inside the apical 1/2 of the lateral elevated ridge and in a longitudinal band narrowly distant from the suture, the punctured area extending basally narrowly along the suture and reaching to basal 1/4. Sutural stria complete and closely impressed along the suture.

Propygidium feebly convex, densely covered with large, round and shallow punctures which are separated by about 0.6 (0.3 – 1) times the diameter, and sparsely intermingled with fine and setiferous punctures. Pygidium (Fig. 49C) has punctuation similar to that of the propygidium.

Anterior margin of prosternum feebly sinuate, the median portion slightly and outwardly arcuate. Disk of prosternum convex medially, densely covered with coarse, round and setiferous punctures which are separated by 0.3 times their diameter and sparsely intermingled with fine punctures. Prosternal process elevated, its posterior margin truncate. Lateral sides of the process and anterior margins of the procoxae marginate and carinate.

Mesosternum short and coarsely punctate, its anterior margin broadly emarginate. Intercoxal disk of metasternum sparsely and coarsely punctate, the punctures being variously separated by about 3 (1 – 5) times their diameter and with short setae. Lateral disk separated from basal 1/3 by post-mesocoxal stria; the basal area deeply excavate to fit mesotibia, impunctate and shining; the apical area has punctuation similar to that of the intercoxal disk, but the punctuation is much sparser and coarser, except on a triangular area before latero-apical angle, and with an oblique stria apically which extends inwardly and posteriorly from the apical 1/3 of the metasternal-metepisternal suture to the apical end of the metasternal suture.

Intercoxal disk of 1st abdominal sternum sparsely covered with coarse, round and setiferous punctures which are separated by about twice their diameter and become sparser medially, and evenly intermingled with other fine punctures; anterior margin

sparser medially, and evenly intermingled with other fine punctures; anterior margin broadly and strongly carinate, the lateral end of the carina extending posteriorly and obliquely, and at apical 1/3 strongly bent outwardly. Lateral disk separated from basal 2/3 by the carina; the basal area deeply excavate to fit metatibia; the apical area impunctate and short.

Protibia narrow, its outer margin angulate medially and without denticles. Outer margins of meso- and metatibiae strongly angulate at basal 1/3.

Specimens examined. [Honshû] 1♂, Sayama-ko, Iruma, Saitama-ken, 5/x/1980, T. Syooda, collected from the nest of *Pheidole ferridola* determined by Dr. Y. Itô (NA). 1♀, Susono-shi, Shizuoka-ken, 29/ix/1988, M. Mori, collected with bait trap.

Distribution. Japan (Honshû; Kyûshû).

Remarks. *Eucurtopsis ohtanii* is easily recognizable by the character states given in the key and description; it cannot be confused with any other Japanese species of the family. Nishikawa and Maruyama (1993) recorded a host ant, *Phaidole fervida* F. Smith, of this species.

6. 3. 3. SUBFAMILY TRIBALINAE BICKHARDT, 1917

GENUS EPIERUS ERICHSON, 1834

Epiurus Erichson, 1834: 158 [type species: *Hister fulvicornis* Fabricius, 1801: 90, designated by Bickhardt, 1917: 123]; Marseul, 1854: 671; Ganglbauer, 1899: 370; Jakobson, 1911: 640, 646; Bickhardt, 1917: 122; Arnett, 1962: 376, 381; Witzgall, 1971: 180; Kryzhanovskij and Reichardt, 1976: 280; Vienna, 1980: 230; Mazur, 1984: 150.

Epiurus lucus Lewis, 1884

Epiurus lucus Lewis, 1884: 136 [Japan: Kasuga no Miya, Nara]; Bickhardt, 1917: 124; Mazur, 1984: 152.

Specimens examined. No specimens of the species have been available for my study.

Distribution. Japan (Honshû).

Epiurus uenoi M. Ôhara, sp. nov. (Fig. 50, 51)

Japanese name: Amami-ana-aki-emma-mushi.

Description. Body length, width and biometric data are as follows: PPL 1.83, PEL 1.71, Width 1.32, APW 0.44, PPW 1.18, PL 0.56, EL 1.10, EW 1.32, ProW 0.61, ProL 0.20, PyL 0.34, PTL 0.47, MSTL 0.39, MTTL 0.42. Body oval, black and shining; femora, tibiae, tarsi, antennae and mouthparts castaneous.

Frontal stria (Fig. 50B) absent anteriorly, but rudimentarily present laterally on basal 1/3; surface of head depressed medially and elevated obliquely above antennal cavity; punctuation of surface fine and evenly separated by about twice their diameter. Labrum with 2 long setae. Club of antenna without segmentation, its apical margin truncate.

Pronotal sides (Fig. 50A) strongly convergent apically; marginal stria complete laterally, but entirely absent anteriorly; disk finely punctate, the punctures being separated by about 3 (2 – 4) times their diameter and becoming a little coarser laterally;

basal margin of pronotum obtusely angulate at middle; broadly even medially.

Epipleural marginal stria complete, sparsely crenate, feebly carinate, and running a little distant from the margin. Narrow band between the margin and epipleural marginal stria with fine punctures in a row. Elytral marginal stria deeply impressed on apical 1/2 and sparsely crenate. Epipleura sparsely and somewhat coarsely punctate and even. Subhumeral stria absent. Oblique humeral stria finely impressed on basal 1/4. First dorsal stria deeply impressed on basal 2/3, sparsely and coarsely crenate. Second and 3rd dorsal striae present on basal 3/4, deeply and broadly impressed, and coarsely crenate. Fourth dorsal stria a little shorter than the 3rd, lightly impressed, and sparsely crenate. Fifth dorsal stria absent or sometime rudimentarily present on medio-basal 1/6. Sutural stria shortly present on median 1/3 and lightly impressed. Interstices among dorsal elytral striae sparsely clothed with fine punctures, which are separated by about 4.5 (4 – 5) times their diameter; on median 1/3 and apical 1/5 the punctures becoming coarser and denser and being separated by about 2.5 (2 – 3) times their diameter except on a narrow sutural band, which is densely and finely punctate, and an extreme apical band, which is impunctate.

Propygidium (Fig. 50C) with coarse punctures which are separated by about 1.5 times the diameter and become finer around margin. Pygidium evenly covered with coarse and round punctures which are separated by about their own diameter.

Anterior margin of prosternal lobe (Fig. 50D) nearly straight medially, its marginal stria clearly impressed and carinate; apical 1/6 of the lobe transversely elevated; disk sparsely clothed with fine punctures. Prosternal keel feebly convex on apical 1/2 and even on basal 1/2; carinal striae distinctly impressed, and divergent apically and basally; punctation of disk of keel similar to that of the prosternal lobe. Descending lateral striae well impressed, complete and divergent apically. Basal margin of the keel broadly emarginate.

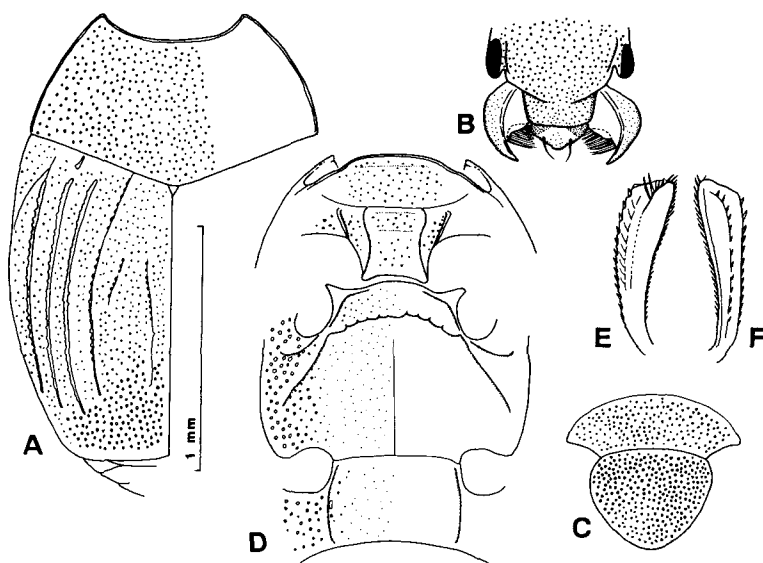


Fig. 50. *Epierus uenoi* M. Ôhara, sp. nov. A: Pronotum and left elytron. B: Head, frontal view. C: Propygidium and pygidium. D: Prosternum, mesosternum, metasternum and 1st abdominal sternum. E: Protibia, dorsal view. F: Ditto, ventral view.

Anterior margin of mesosternum (Fig. 50D) round, its marginal stria nearly complete laterally and broadly interrupted medially on anterior margin; disk sparsely clothed with fine punctures which are a little finer than the pronotal ones and separated by about 2.5 (2 – 3) times their diameter. Meso-metasternal suture strongly and sparsely crenate, carinate and arcuate anteriorly. Punctuation of intercoxal disk of metasternum similar to that of the mesosternum, the punctures becoming coarser and sparser laterally. Mid line of the disk weakly elevated on median 1/5. Lateral metasternal stria extending obliquely and posteriorly on basal 2/3. Lateral disk of metasternum covered with large and round punctures which are separated by 0.75 times the diameter. Mesocoxal stria extending obliquely and posteriorly, its lateral end not attaining to the lateral margin of metasternum.

Intercoxal disk of 1st abdominal sternum sparsely clothed with fine punctures which are separated by about 5 (4 – 6) times their diameter; 1st abdominal stria complete on each lateral side.

Protibia (Fig. 50E, F) slender and multidentate (with 11 small denticles on outer margin).

Male genitalia as shown in Fig. 51.

Specimens examined. Holotype, ♂, Tsunagu, Amami-Ôshima Is., Nansei Isles, 2/iii/1989, T. Ueno (EIHU).

Distribution. Japan (Nansei Isles: Amami-Ôshima Is.).

Etymology. This species is named in honor of Mr. Teruhisa Ueno, who gave me the opportunity to study the specimen.

Remarks. *Epierus uenoi* can easily be distinguished from *E. lucus* by the striation of the elytra, and by its limited distribution (Amami-Ôshima, Nansei Isles).

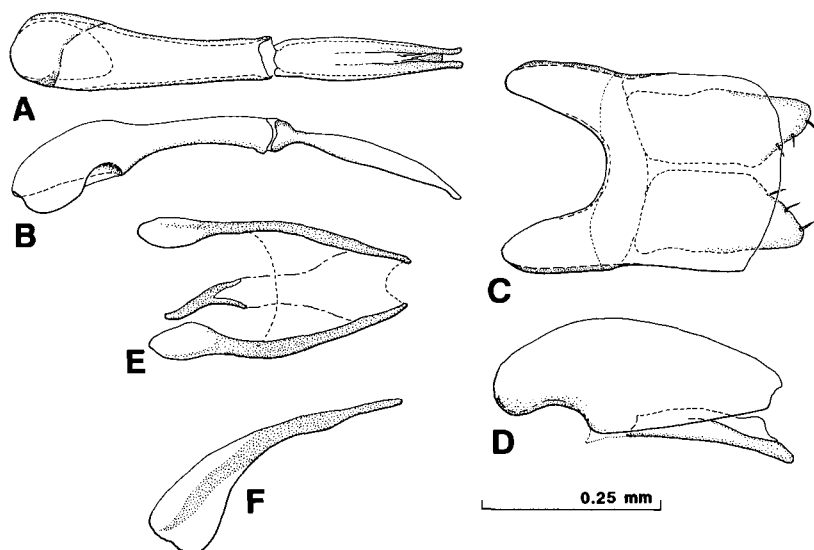


Fig. 51. *Epierus uenoi* M. Ôhara, sp. nov. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

6. 3. 4. SUBFAMILY ONTHOPHILINAE THOMSON, 1862

Key to the Japanese genus of the subfamily Onthophilinae

- 1(2) Dorsal surface without hair. Genus *Onthophilus* Leach, 1817
2(1) Dorsal surface with short and stout hairs. Genus *Epiechinus* Lewis, 1891

GENUS ONTHOPHILUS LEACH, 1817

Onthophilus Leach, 1817: 77 [type species: *Hister striatus* Forster, 1771]; Ôhara and Nakane, 1986: 3.

Scolytus O. Müller, 1776: 22 [nec Geoffroy, 1762: 309], synonymized by Jakobson, 1911: 641.

Orthophilus: Westwood, 1840: 22 [misspelled], corrected by Westwood, 1840: 157.

Japanese species of this genus were already revised by Ôhara and Nakane (1986). Some specimens examined thereafter are added below.

Key to the Japanese species of the genus *Onthophilus*.

- 1(2) Pronotum with 8 costae. Body length 2.50 – 2.65 mm. *O. silvae* Lewis, 1884
2(1) Pronotum with 4 or 6 costae.
3(8) EC₃ (elytral costa 3) ending just caudad of a deep transverse fossa situated within front margin of elytron.
4(5) PC₃ (pronotal costa 3) present on apical and basal 1/2 of pronotum, and strongly developed. Body length, 3.60 – 4.68 mm. *O. ostreatus* Lewis, 1879
5(4) PC₃ absent, or present only on basal 1/2 of pronotum.
6(7) PC₃ present. Body length, 2.50 – 3.02 mm. *O. niponensis* Lewis, 1907
7(6) PC₃ absent. Body length, 3.28 – 3.38 mm. *O. aonoi* M. Ôhara et Nakane, 1986
8(3) EC₃ entire upto front margin of elytron.
9(10) Body longer than 2.5 (2.86 – 3.54) mm. Elytral costae sometimes interrupted. *O. ordinarius* Lewis, 1879
10(9) Body shorter than 2.5 mm. Elytral costae clear and complete.
11(12) Propygidium with 3 costae. Body length, 1.82 – 2.34 mm. *O. flavicornis* Lewis, 1884
12(11) Propygidium with 1 costa. Body length, 2 mm (after Adachi, 1930)... *O. kamiyai* Adachi, 1930

Onthophilus silvae Lewis, 1884

Onthophilus silvae: Ôhara and Nakane, 1986: 5.

Japanese name: Shinano-sesuji-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 2 exs., Yahata, Kutchan, 20, 30/viii/1993, M. Ôhara, collected near the nest of ant, *Lasius (Dendrolasius) fuliginosus*.

[Honshû] Kanagawa-ken: 1 ex., Daiyû-zan, Hakone, 14/viii/1982, Y. Hirano (NSMT).

Distribution. Japan (Hokkaidô, Honshû).

Onthophilus aonoi M. Ôhara et Nakane, 1986

Onthophilus aonoi Ôhara and Nakane, 1986: 6; Hirano, 1988: 41 [Kanagawa, Honshû].

Japanese name: Nise-ko-sesuji-emma-mushi.

Distribution. Japan (Honshû).

Onthophilus ostreatus Lewis, 1879

Onthophilus ostreatus: Ôhara and Nakane, 1986: 5.

Japanese name: Ô-sesuji-emma-mushi.

Specimens examined [additional records]. [Honshû] Ibaraki-ken: 1 ex., Tadobe, Sakuragawa, Niiharu-gun, 3/xi/1984, K. Haga. Tôkyô-to: 1 ex., Nakano, 20/xi/1923, no collector's name (NSMT); 1 ex., Tôkyô, no data and no collector's name (NSMT); 5 exs., Tôkyô, 25/x/1936, T. Adachi (NSMT). Kanagawa-ken: 6 exs., Mizonokuchi, no date and no collector's name (NSMT). Hyôgo-ken: 1 ex., Harada, Kôbe, 19/xi/1914, no collector's name (BSM).

Distribution. Japan (Honshû, Shikoku, Kyûshû); Continental China; Taiwan.

Onthophilus niponensis Lewis, 1907

Onthophilus niponensis: Ôhara and Nakane, 1986: 6.

Japanese name: Ko-sesuji-emma-mushi.

Specimens examined [additional records]. [Honshû] Fukushima-ken: 6 exs., Wakamatsu, 19/iv/1947, Y. Kurosawa (NSMT). Tôkyô-to: 1 ex., Komazawa, 4/vii/1931, K. Seiki (NSMT). Gifu-ken: 1 ex., Nannou, 11/iv/1981, T. Nohira (refer to Takai, 1989).

Distribution. Japan (Honshû, Kyûshû).

Onthophilus ordinarius Lewis, 1879

Onthophilus ordinarius: Ôhara and Nakane, 1986: 9.

Japanese name: Ezo-sesuji-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 10 exs., Nopporo, 5/vi/1987, M. Ôhara; 5 exs., Ditto, 12/vi/1987, M. Ôhara; 1 ex., Ditto, 18/vii/1987, M. Ôhara; 2 exs., Sapporo, 10/vi/1940, Y. Nishijima (NSMT).

Distribution. Japan (Hokkaidô); Russia (Vladivostok, Baikal Sea, Novosibirsk, Irkutsk, Ussuri).

Onthophilus flavicornis Lewis, 1884

Onthophilus flavicornis: Ôhara and Nakane, 1986: 9.

Japanese name: Kinoko-sesuji-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Sapporo, 26/vi/1939, Y. Nishijima (NSMT).

[Honshû] Ibaraki-ken: 1 ex., Kamisaki, Sakura-mura, 4/v/1985, K. Haga. Tochigi-ken: 1 ex., Nikkô, 11/v/1985, M. Kiuchi. Saitama-ken: 1 ex., 20/iv/1968, H. Takizawa. Tôkyô-to: 1 ex., Kakinoki-zaka, Meguro, 5/iv/1947, H. Watanabe (NSMT). Nagano-ken: 4 exs., Jigoku-dani, Yamanouchi, 29/iv/1983, M. Kiuchi; 1 ex., Shiga-Kôgen, 7/v/1986, H. Tanaka.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû).

Onthophilus kamiyai Adachi, 1930

Onthophilus kamiyai: Ôhara and Nakane, 1986: 9.

Japanese name: Nise-kinoko-sesuji-emma-mushi.

Distribution. Japan (Honshû).

GENUS EPIECHINUS LEWIS, 1891

Epiechinus Lewis, 1891: 320 [type species: *Onthophilus costipennis* Fahreus in Boheman, 1851: 549; originally designated]; 1892c: 232; Bickhardt, 1916-17: 66; 1921: 80; Desbordes, 1919: 408; Reichardt, 1941: 94; Kryzhanovskij and Reichardt, 1976: 290; Mazur, 1984: 146.

Epiechinus arboreus (Lewis, 1884)

(Fig. 52, 53, 54)

Onthophilus arboreus Lewis, 1884: 139 [Japan: Honshû: Nara].

Epiechinus arboreus: Lewis, 1891: 320; Hisamatsu, 1985b: 226, pl. 4, f. 1.

Scolytus arboreus: Jakobson, 1911: 652.

Japanese name: Chibi-ke-sesuji-emma-mushi.

Description. Body oval, dark brown, furnished with minute spines and usually covered with mudlike scales. Body length, PPL, 1.58 – 1.99 mm (1.82 ± 0.04 , n=7), PEL, 1.56 – 1.91 mm (1.78 ± 0.04 , n=7). Width, 1.36 – 1.62 mm (1.51 ± 0.03 , n=7). Biometric data are given in Table 7.

Frontal lateral sides (Fig. 52D) convergent apically on basal 1/2 and strongly emarginate behind antennal sockets; anterior margin roundly arcuate. Margin of the frontal disk strongly carinate. Disk with 5 longitudinal costae; the median costa present on basal 1/2; the lateral costae convergent apically through behind the antennal sockets and united with each other anteriorly; 5 crossing costae present anteriorly between the lateral costa and the anterior marginal carina; the mediolateral costae shortly present on basal 1/4. Surface of the disk sparsely furnished with minute spines.

Pronotal sides (Fig. 52A) feebly convergent forward on basal 3/4, thence strongly convergent apically, and strongly carinate and densely furnished with minute spines. Anterior margin of pronotum broadly emarginate, the median portion nearly straight. Disk with 6 costae (Fig. 52E); the median 4 costae present on apical 1/3 and feebly elevated; the lateral costae strongly elevated, complete and interrupted at apical 1/4; sides of these costae furnished with minute spines. Surface of the disk sparsely covered with coarse and round punctures which are separated by about 1.5 (1 – 3) times the diameter and have minute setae in a trapezoid area on the mediobasal 2/3; other area, except on costae, impunctate and shining.

Epiptera without stria, with a costa on margin of elytron, the costa sinuate at middle and furnished with minute spines on basal 1/2; surface with 2 punctured rows, the punctures quadrate, large and shallow, the inner row complete and the outer (running close to the margin) shortly present on medio-apical 1/4. Disk of elytron (Fig. 52A) with 5 spinal costae (excluding the costa on elytral margin); the 1st – 4th costae (counted from outside to inside) strongly elevated, complete and furnished with minute

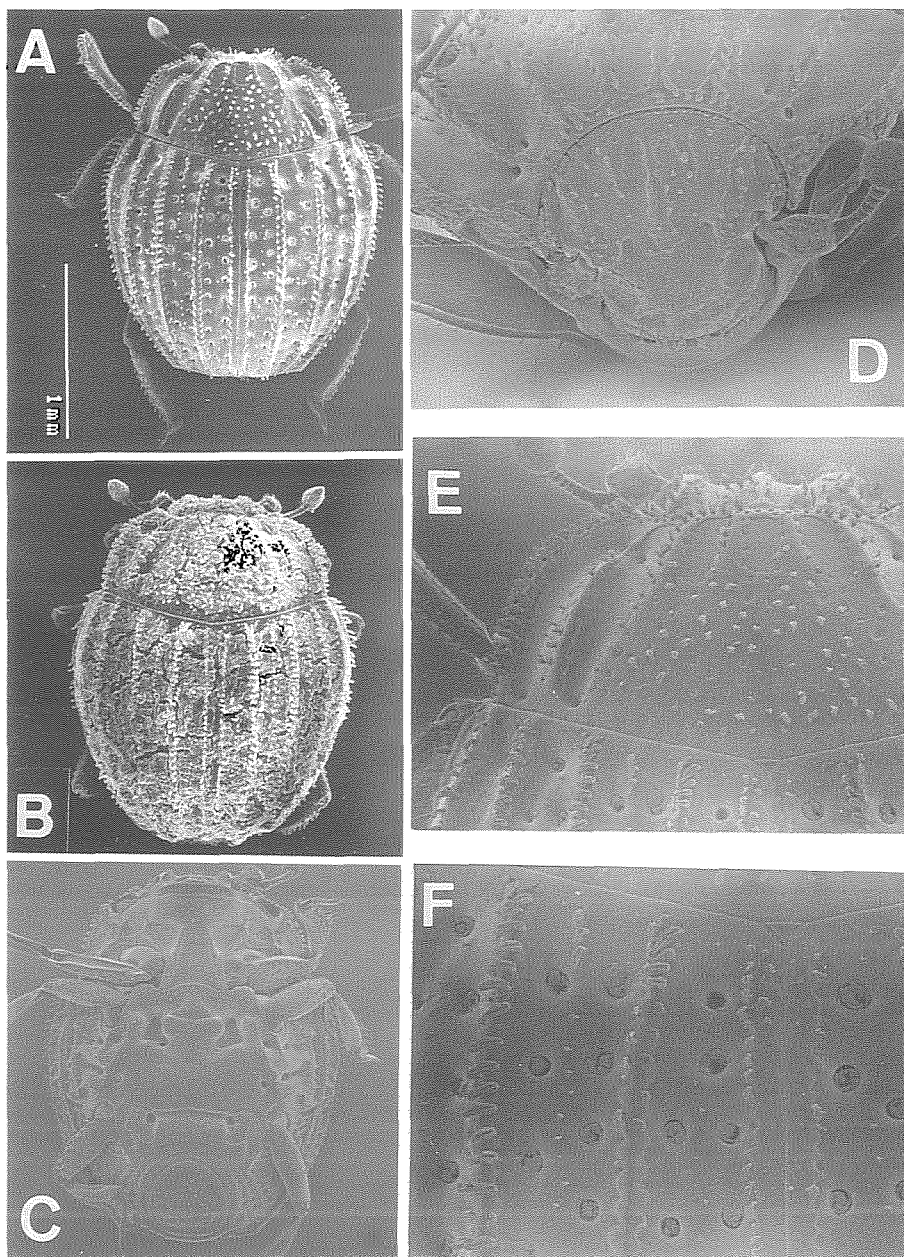


Fig. 52. *Epiechinus arboreus* (Lewis). A: Adult, dorsal view. B: Ditto, covered with mudlike scales, dorsal view. C: Ditto, ventral view. D: Head, frontal view. E: Pronotum, dorsal view. F: Left elytron, dorsal view.

spines on their lateral sides; the sutural costa (closely present along suture) slightly elevated and furnished with minute spines only on the outer lateral side; interspace (Fig. 52F) between these costae with 2 punctured rows, the punctures round, large, deep, and separated by about their own diameter.

Propygidium short, depressed laterobasally and irregularly covered with coarse, round, shallow and spiral punctures, and intermingled with fine punctures among coarse ones; large, round and shallow punctures present along the anterior margin. Pygidium (Fig. 53D) irregularly covered with various-sized and large punctures which are densely present medially, and other fine punctures intermingled.

Anterior margin of prosternal lobe (Fig. 52C, 53A) nearly straight; disk with a transverse punctured row on apical 1/5, and sparsely with fine spines. Suture between the lobe and the keel clearly impressed. Prosternal keel feebly depressed, its carinal striae strongly elevated, convergent apically; posterior margin broadly and roundly emarginate. Lateral prosternal striae strongly carinate and divergent apically.

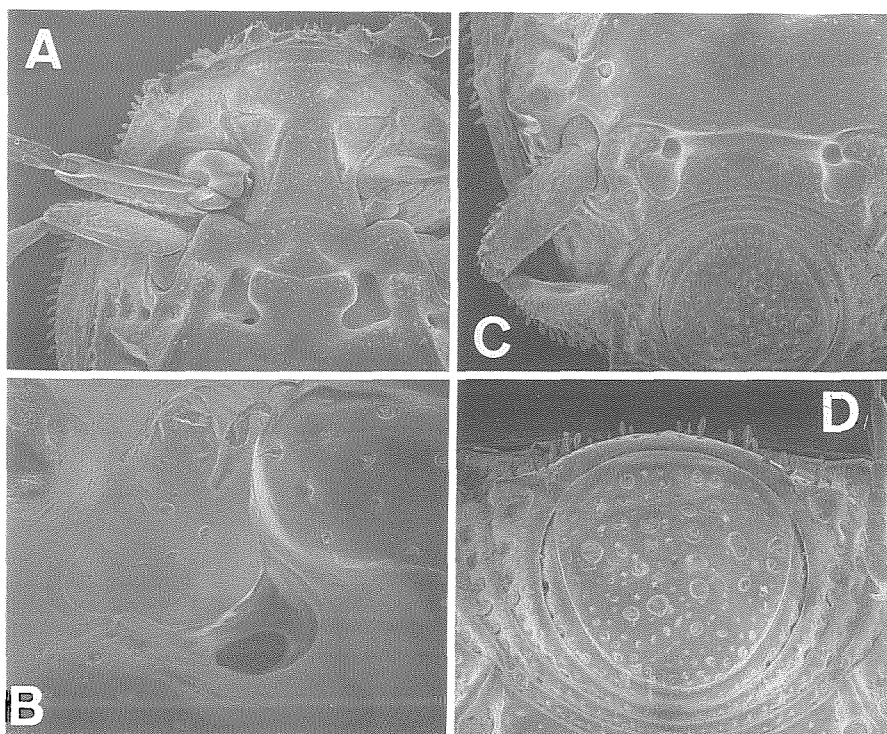


Fig. 53. *Epiechinus arboreus* (Lewis). A: Prosternum and mesosternum, ventral view. B: Fovea of mesosternum. C: Intercoxal disk of 1st abdominal sternum, ventral view. D: Pygidium, caudal view.

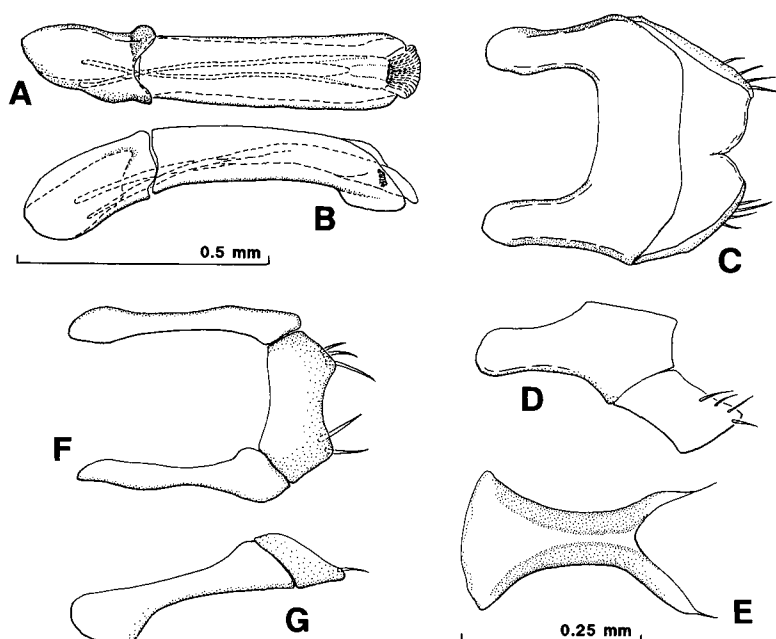


Fig. 54. *Epiechinus arboreus* (Lewis). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th sternum (spicule), dorsal view. F: Male genitalia, 9th and 10th tergite, dorsal view. F: Ditto, lateral view.

Table 7. Biometric data of *Epiechinus arboreus* (Lewis).

APW	0.55-0.67	(0.62±0.01)	7
PPW	1.06-1.30	(1.21±0.03)	7
PL	0.59-0.71	(0.65±0.02)	7
EL	0.95-1.18	(1.10±0.03)	7
EW	1.36-1.62	(1.51±0.03)	7
ProW	0.51-0.67	(0.60±0.02)	7
ProL	0.16-0.26	(0.22±0.01)	7
PyL	0.39-0.47	(0.44±0.01)	7
PTL	0.47-0.63	(0.56±0.02)	7
MSTL	0.37-0.53	(0.49±0.02)	7
MTTL	0.39-0.57	(0.53±0.02)	7

Anterior margin of mesosternum (Fig. 53A) sinuate, the median portion produced to fit the prosternal emargination; disk short and deeply excavate laterally (Fig. 53B); posterior margin angulate obtusely at middle; surface sparsely covered with fine spiral punctures, deeply excavate laterobasally and at apical 1/3 on lateral side, the laterobasal excavation becoming broader posteriorly and inwardly. Lateral metasternal stria carinate, extending posteriorly obliquely and angulate outwardly at basal 1/5.

Lateral disk with 2 deep excavations (Fig. 53C), the basal one present behind the mesocoxa and the apical one transverse and present on apical 1/2; remains of the basal 1/2 covered with large round and shallow punctures.

Intercostal disk of 1st abdominal sternum (Fig. 53C) short, with 2 excavations; the basal one deeply present on each lateral area, and the apical one shallowly on each latero-apical angle.

Protibia narrow, its outer margin with 10 setae and angulate medially; interspace between apical 2nd and 3rd setae broad. Mesotibia with 12 setae on outer margin. Metatibia with 13 setae on outer margin.

Male genitalia as shown in Fig. 54.

Specimens examined. [Honshû] Nara-ken: 1 ex., Kasuga-yama, 8/i/1954, M. Ôtake (NA); 3 exs., Ditto, 19/vi, 7, 14/vii/1957, T. Shibata (NA); 2 exs., Ditto, 13/vi/1958, T. Nakane (NA); 1 ex., 18/iv/1965, M. Gotô (NA); 8 exs., Ditto, 26/xi/1958, T. Shibata (NSMT); 1 ex., Nara, 28/iii/1959, no collector's name (NSMT).

Distribution. Japan (Honshû).

Remarks. *Epiechinus arboreus* is easily distinguished from other Japanese species of the subfamily Onthophilinae by its small size and the presence of minute spines on the dorsal surface in combination with the distinctly developed elytral costae.

Little is known about the habitat of this species. Lewis (1884) noted that this species was residing in galleries of wood-borers, probably *Tomicus*.

6. 3. 5. SUBFAMILY HISTERINAE GYLLENHAL, 1808

Key to the Japanese tribes and genera of the subfamily Histerinae

- 1(6) Tarsal groove of protibia S-shaped.
- 2(3) Head porrect, horizontal in repose. Tribe Hololeptini Lacordaire, 1854
..... Genus *Hololepta* Paykull, 1811
- 3(2) Head vertical in repose. Tribe Platysomatini Bickhardt, 1917
- 4(5) Body oblong-oval. Genus *Platysoma* Leach, 1817
- 5(4) Body oval. Genus *Eblisia* Lewis, 1889
- 6(1) Tarsal groove of protibia straight.
- 7(10) Anterior margin of mesosternum bisinuate with a more or less distinct median projection which fits into basal margin of prosternum. Tribe Exosternini Bickhardt, 1917
- 8(9) Body red. Genus *Notodoma* Lacordaire, 1854
- 9(8) Body darkish bronze. Genus *Binhister* Cooman, 1934
- 10(7) Anterior margin of mesosternum straight or truncate or emarginate, not bisinuate.
..... Tribe Histerini Gyllenhal, 1808
- 11(18) Anterior margin of mesosternum truncate or emarginate at middle (in *Hister simplicisternus*, the anterior margin straight; but *simplicisternus* is detected by having 2 pronotal lateral striae and by the short and deeply impressed external subhumeral stria on the elytron).
- 12(17) External subhumeral stria of elytron not completed.
- 13(16) Pronotum with 2 lateral striae.
- 14(15) Pronotum and elytra without large and deep punctures. Genus *Hister* Linnaeus, 1758
- 15(14) Pronotum and elytra densely covered with large and deep punctures.
..... Genus *Zabromorphus* Lewis, 1906
- 16(13) Pronotum with 1 lateral stria. Genus *Merohister* Reitter, 1908
- 17(12) External subhumeral stria of elytron complete. Genus *Margarinotus* Marseul, 1853
- 18(11) Anterior margin of mesosternum straight or feebly arcuate outwardly, sometimes feebly emarginate at middle, but marginal stria of mesosternum not emarginate.
..... Genus *Atholus* Thomson, 1859

TRIBE EXOSTERNINI BICKHARDT, 1917

This tribe has already been revised by Ôhara and Nakane (1989). I add some specimens examined thereafter.

GENUS BINHISTER COOMAN, 1934

Binhister Cooman, 1934: 122 [type species: *Binhister barbarus* Cooman, 1934, originally designated]; Mazur, 1984: 288; Ôhara and Nakane, 1989: 290.

Binhister chujoi Cooman, 1941

Binhister chujoi Cooman, 1941: 332; Ôhara and Nakane, 1989: 290.

Japanese name: Chûjô-chibi-emma-mushi.

Specimens examined [additional records]. [Honshû] Tôkyô-to: 3 exs., Mt. Takao, 21/vi/1963, S. Nomura (NSMT). Nagano-ken: 1 ex., Nojiri, Gaijin-mura, 25/viii/1941, T. Nakane (refer to Ôsawa and Nakane (1951)). Kyôto-fu: 1 ex., Kyôto University, 3/vii/1951, F. Takahashi (NA); 1 ex., Mt. Daihi, 30/v/1959, Y. Hama (NSMT).

Distribution. Japan (Honshû).

GENUS NOTODOMA LACORDAIRE, 1854

Notodoma Lacordaire, 1854: 266; Ôhara and Nakane, 1989: 285.

Notodoma fungorum Lewis, 1884

Notodoma fungorum Lewis, 1884: 136; Ôhara and Nakane, 1989: 286.

Japanese name: Kinoko-aka-maru-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Sapporo, 7/vii/1955, T. Kumata (EIHU); 1 ex., Maruyama, Sapporo, 29/v/1991, K. Miyashita; 8 exs., Tôya-Naka-no-shima, Abuta, 17/vii/1993, S. Hori (HOR).

[Honshû] Iwate-ken: 3 exs., Matsuo, 17-19/vii/1954, S. Takagi (EIHU). Fukushima-ken: 3 exs., Yunohana, Tateiwa, Minami-Aizu, 21/vi/1947, 7/vii/1948, Y. Kurosawa (NSMT); 1 ex., Yunohana, Ôuchi, Narahara, Minami-Aizu, 13/vi/1948, Y. Kurosawa (NSMT). Tôkyô-to: 24 exs., Takao, 29/v/1968, 3/vii/1969, H. Takizawa; 2 exs., Ditto, 21/vi/1963, S. Nomura (NSMT); 1 ex., Mt. Kuwanori, 28/v/1968, H. Takizawa; 2 exs., Nippara, 26/vii/1966, Y. Kurosawa (NSMT). Yamanashi-ken: 1 ex., Torii-tôge, 10/vii/1938, Imazaki (NSMT). Nagano-ken: 2 exs., Kutsukake, Shinano, 7/viii/1941, T. Niimura (NSMT); 1 ex., Amori, Nagano-shi, 24/vii/1979, T. Fujisawa. Hyôgo-ken: 2 exs., Kiri-hata, Takarazuka, 7/vi/1992, T. Itô. Tottori-ken: 2 exs., Mt. Daisen, 14/vii/1947, H. Kôno (NSMT).

[Kyûshû] Tsushima Is.: 3 exs., Meboro, Mt. Mitake, 15-18/vii/1968, S. Miyamoto and A. Nakanishi (NSMT); 2 exs., Mine, 10/vi/1969, T. Nakane (NSMT).

[Nansei Isles] Yaku-shima Is.: 8 exs., Yaku-Sugi land, 3/vii/1975, Y. Kurosawa (NSMT); 2 exs., Shiratani, Yaku-shima, 20/vi/1975, Y. Kurosawa (NSMT); 1 ex., Ambô, 21/vi/1975, Y. Kurosawa (NSMT).

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Izu Isles, Tsushima Isles, Nansei Isles); Taiwan.

TRIBE HOLOLEPTINI LACORDAIRE, 1854

GENUS HOLOLEPTA PAYKULL, 1811

Hololepta Paykull, 1811: 101; Ôhara, 1991a: 102.

The Japanese species of the genus *Hololepta* have already been revised by Ôhara (1991a, b). I add some specimens examined thereafter.

SUBGENUS HOLOLEPTA PAYKULL, 1811

Key to the Japanese species of the subgenus *Hololepta*

- 1(4) Propygidium without stria.
- 2(3) Anterior margin of prosternal lobe outwardly arcuate. Body (head excluded) larger, 7.3 – 8.7 mm. Large fovea present on pronotal anterior angle in male. *H. amurensis* Reitter, 1879
- 3(2) Anterior margin of prosternal lobe feebly emarginate. Pronotum without foveae. Body smaller, 5.7 – 7.0 mm. *H. depressa* Lewis, 1884
- 4(1) Propygidium with a stria on each side. *H. higoniae* Lewis, 1894

Hololepta (Hololepta) amurensis Reitter, 1897

Hololepta amurensis Reitter, 1879: 213.

Hololepta (Hololepta) amurensis: Ôhara, 1991a: 103.

Japanese name: Ô-hirata-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 8 exs., Mt. Yôtei, Hirafu, Kutchan, 15-16, 22/vii/1991, M. Ôhara; 1 ex., Asahi-Tenbôdai, Otaru, 21/v/1991, M. Ôhara.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Izu Isles, Tsushima Isles, Yaku-shima Is.); East Siberia; Primorskij Kray; Korea; Taiwan; Continental China.

Hololepta (Hololepta) depressa Lewis, 1884

Hololepta depressa Lewis, 1884: 132.

Hololepta (Hololepta) depressa: Ôhara, 1991b: 235.

Japanese name: Hirata-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 4 exs., Mt. Yôtei, Hirafu, Kutchan, 15-16, 22/vii/1991, 26/v/1992, M. Ôhara.

[Honshû] Tochigi-ken: 1 ex., Aoyagi, Kuriyama, 16/vi/1979, S. Takahashi (TPM); 1 ex., Yunishi-Kawahira-Sawa, Kuriyama, 7/vii/1991, K. Suzuki (TPM).

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Taiwan.

Hololepta (Hololepta) higoniae Lewis, 1894

Hololepta parallela Lewis, 1884: 132 (nec G. Koch, 1868).

Hololepta higoniae Lewis, 1894: 174; Miwa, 1938: 84, 85; Kurosawa, 1952: 24 [Honshû].

Hololepta (Hololepta) higoniae: Ôhara, 1991b: 238; Kurosawa, 1992: 7.

Japanese name: Higo-hirata-emma-mushi.

Distribution. Japan (Honshû, Kyûshû); Laos; Viet-Nam; Taiwan; Continental China (Yunnan).

TRIBE PLATYSOMATINI BICKHARDT, 1917

GENUS PLATYSOMA LEACH, 1817

Platysoma Leach, 1817: 77 [type species: *Hister depressus* Fabricius, 1787: 32, designated by Westwood, 1840: 22].

Abbotia Leach, 1830: 155, synonymized by Waterhouse, 1868: 168. Without type species.

Part of this genus, including subgenus *Platysoma*, has already been revised in Ôhara (1986). I renew the key to the Japanese species and add some specimens to the species treated at that time.

Key to the Japanese subgenera of the genus *Platysoma*

- 1(2) Body strongly depressed. Interspace between coxae broad, its width the same as length of metatibia. Subgenus *Apobletes* Marseul, 1860
- 2(1) Body moderately convex. Interspace between coxae not broad, its width the same as 1/3 length of metatibia.
- 3(4) Body slender, and narrower than length of sutural line of elytra. Subgenus *Cylister* Cooman, 1941
- 4(3) Body oval or oblong-oval. Body as wide as length of sutural line of elytra.
- 5(6) Margin of pygidium strongly carinate. Subgenus *Platylister* Lewis, 1892
- 6(5) Margin of pygidium not carinate. Subgenus *Platysoma* Leach, 1817

SUBGENUS PLATYSOMA LEACH, 1817

Key to the Japanese species of the subgenus *Platysoma*

- 1(4) Pronotum smooth, impunctate (or at most microscopically punctulate).
- 2(3) Elytra rugulose on apical 1/3; dorsal striae 1 – 3 complete, 4th abbreviated on basal 1/3, 5th and sutural present on apical 1/2; pygidium with a deep fovea on each side at base; body length 3.3 – 3.65 mm. *P. (P.) tsushimae* M. Ôhara, 1986
- 3(2) Elytra not rugulose; dorsal striae 1 – 3 complete, 4th apical, 5th abbreviated on basal 1/3, sutural stria wanting; pygidium without fovea; body length 3.05 – 3.8 mm. *P. (P.) unicum* Bickhardt, 1912
- 4(1) Pronotum punctate, especially densely on lateral area.
- 5(8) Body length 4.2 – 5.3 mm; prosternal process with carinal striae; lateral pronotal stria rather distant from the side margin.
- 6(7) Sutured stria on basal 1/2, consisting of moderately coarse punctures; dorsal striae 1 – 4 complete, 5th obsolescent at base; body length 4.2 – 5.3 mm. *P. (P.) lewisi* Marseul, 1873
- 7(6) Sutured stria absent; dorsal striae 1 – 3 complete, 4th and 5th found on apical 1/2; body length 5.0 mm. *P. (P.) vagans* Lewis, 1884
- 8(5) Body length 2.13 – 3.8 mm; prosternal process without carinal striae; lateral pronotal stria rather close to the margin.
- 9(12) Dorsal striae 1 – 4 complete (in *P. celatum* Lew. rarely abbreviated on the base).
- 10(11) Pygidial punctures almost as large as the coarse propygidial ones; metatibia without a spine, or with very fine spinules on outer margin; lateral pronotal stria complete; body length 2.13 – 2.95 mm. *P. (P.) celatum* Lewis, 1884

- 11(10) Pygidium more closely punctate than propygidium; metatibia always with a large spine on outer margin at apical 2/3; lateral pronotal stria narrowly interrupted behind each eye; body length 2.9 – 3.4 mm. *P. (P.) deplanatum* (Gyllenhal, 1808)
- 12(9) Dorsal striae 1 – 3 complete.
- 13(14) Sutural stria is present on apical area; lateral pronotal stria narrowly interrupted behind each eye; body length 3.25 – 3.8 mm. *P. (P.) takehikoi* M. Ôhara, 1986
- 14(13) Sutural stria is absent; lateral pronotal stria complete; body length 2.4 – 3.1 mm. *P. (P.) rasile* Lewis, 1884

Platysoma (Platysoma) celatum Lewis, 1884

Platysoma celatum Lewis, 1884: 134; Ôhara, 1986: 99.

Japanese name: Hime-naga-emma-mushi.

Specimens examined [additional records]. [Honshû] Yamagata-ken: 1 ex., Tama-gawa, 7/v/1975, Y. Kurosawa (NSMT). Fukushima-ken: 1 ex., Yunohana, Tateiwa, Minami-Aizu, 21/vii/1947, Y. Kurosawa (NSMT); 1 ex., Mt. Senaka-Aburi, Higashi-yama, Kita-Aizu, 13/v/1951, Y. Kurosawa (NSMT); 1 ex., Suimon, Asahida, Minami-Aizu, 4/vi/1949, Y. Kurosawa (NSMT); 1 ex., Jabami, Nagaino, Ônuma, 25/vi/1949, K. Nagayama (NSMT). Tochigi-ken: 1 ex., Yokokawa, Fujiwara-chô, 24/ix/1989, H. Yoshimoto (TPM); 1 ex., Ôhira-yama, 27/v/1989, H. Yoshitomi (TPM); 3 exs., Kaji-ga-sawa, Ujiie-chô, 27/iv/1988, K. Satoh (TPM); 1 ex., Tsuruta-Numa, Utsunomiya, 11/vi/1991, K. Satoh (TPM). Niigata-ken: 1 ex., Echigo-Koma-ga-take, 13-14/ix/1970, H. Takizawa. Nagano-ken: 2 exs., Mt. Yatsu-ga-take, 4/x/1941, M. Hanao (NSMT). Okayama-ken: 1 ex., Mimasaka, vii/1912, J. E. A. Lewis (BSM).

[Kyûshû] Fukuoka-ken: 2 exs., Mt. Shôji, 28/iv/1964, 16/vi/1964, S. Nakao (NA).

Distribution. Japan (Hokkaidô, Shikoku, Kyûshû); Continental China.

Platysoma (Platysoma) deplanatum (Gyllenhal, 1808)

Hister deplanatum Gyllenhal, 1808: 85; Lewis, 1906a: 340.

Platysoma deplanatum: Ôhara, 1986: 100.

Japanese name: Kita-naga-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Rubeshibe, 30/v/1980, H. Torikura; 1 ex., Oku-Shibetsu, Kamikawa, Teshio, 29/vi/1949, T. Hasegawa (NSMT); 4 exs., Raibetsu, Shibeche, Kushiro, 6/vii/1972, 12/vii/1973, 15/vii/1975, K. Ijima (IJ); 3 exs., Futatsu-yama, Shibeche, Kushiro, 12/vi/1956, 24/vi/1973, 12/vi/1975, K. Ijima (IJ); 1 ex., Rururan, Sugano, Shibeche, Kushiro, 24/vii/1992, K. Ijima (IJ); 1 ex., Kami-Ashoro, Ashoro-chô, 4/vii/1993, K. Itô.

Distribution. Japan (Hokkaidô); Europe; Siberia; Mongolia; Korea.

Platysoma (Platysoma) lewisi Marseul, 1873

Platysoma lewisi Marseul, 1873: 222; Ôhara, 1986: 97.

Japanese name: Ô-naga-emma-mushi.

Specimens examined [additional records]. [Honshû] Ôsaka-fu: 2 exs., Minoo, 15/vi/1958, Y. Hama (NSMT). Hyôgo-ken: 1 ex., Kôbe, vi/1912, J. E. A. Lewis (BSM).

[Kyûshû] Fukuoka-ken: 1 ex., Mt. Shôji, 13/vii/1963, S. Nakao (NA). Kagoshima-ken: 2 exs., Takachiho-gawara, Kirishima, 5/vi/1985, Y. Takai.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Tsushima Isles); Continental China.

Platysoma (Platysoma) rasile Lewis, 1884

Platysoma rasile Lewis, 1884: 134; Ôhara, 1986: 104.

Japanese name: Nise-hime-naga-emma-mushi.

Specimens examined [additional records]. [Honshû] Tochigi-ken: 1 ex., Ochiai, Kaminagachi, Kurino-chô, 10/vii/1991, K. Satoh (TPM). Chiba-ken: 1 ex., Mt. Kiyosumi, 24/v/1976, M. Tomokuni (NSMT). Tôkyô-to: 1 ex., Aihara, 16/v/1987, H. Takizawa; 1 ex., Kinuta, Setagaya, 30/iv/1967, Y. Kurosawa (NSMT).

[Kyûshû] Fukuoka-ken: 1 ex., Mt. Shôji, 30/v/1971, S. Nakao (NA).

Distribution. Japan (Honshû, Shikoku, Kyûshû, Tsushima Isles, Nansei Isles).

Platysoma (Platysoma) takehikoi M. Ôhara, 1986

Platysoma takehikoi M. Ôhara, 1986: 102.

Japanese name: Nakane-naga-emma-mushi.

Specimens examined [additional records]. [Nansei Isles] Ishigaki Is.: 1 ex., Banna-dake, Ishigaki, 31/x/1974, K. Tazoe. Iriomote Is.: 1 ex., Ôhara, 12/iii/1990, Y. Okushima.

Distribution. Japan (Nansei Isles).

Platysoma (Platysoma) tsushima M. Ôhara, 1986

Platysoma tsushima M. Ôhara, 1986: 94.

Japanese name: Tsushima-naga-emma-mushi.

Distribution. Japan (Tsushima Isles).

Platysoma (Platysoma) vagans Lewis, 1884

Platysoma vagans Lewis, 1884: 133; Ôhara, 1986: 97.

Japanese name: Heri-naga-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., 13-no-sawa, Mitsumata, Kami-Shihoro, 23/viii/1992, K. Miyashita; 1 ex., Nopporo, Ebetsu, 19/vi/1987, M. Ôhara.

[Shikoku] Kôchi-ken: 1 ex., Tebako, 25/vii/1962, D. Motomura (NSMT).

Distribution. Japan (Hokkaidô, Honshû).

Platysoma (Platysoma) unicum Bickhardt, 1912

Platysoma unicum Bickhardt, 1912: 124; Ôhara, 1986: 96.

Japanese name: Tokara-naga-emma-mushi.

Distribution. Japan (Nansei Isles); Taiwan.

SUBGENUS PLATYLISTER LEWIS, 1892

Platylister Lewis, 1892d: 103 [type species: *Platysoma ovatum* Erichson, 1834: 108, originally designated].

Key to the Japanese species of the subgenus *Platylister*

- 1(4) Front of head strongly concave.
- 2(3) First – 4th dorsal elytral striae complete. Body small, 4.00 – 4.75 mm. *P. (P.) pini* Lewis, 1884
- 3(2) First – 3rd dorsal striae complete. Body large, 4.50 – 6.06 mm. *P. (P.) cambodjense* Marseul, 1864
- 4(1) Front of head flat or weakly concave.
- 5(6) Fourth dorsal elytral stria longer than or as long as 5th. *P. (P.) horni* Bickhardt, 1913
- 6(5) Fourth dorsal elytral stria shorter than 5th. *P. (P.) atratum* Erichson, 1834

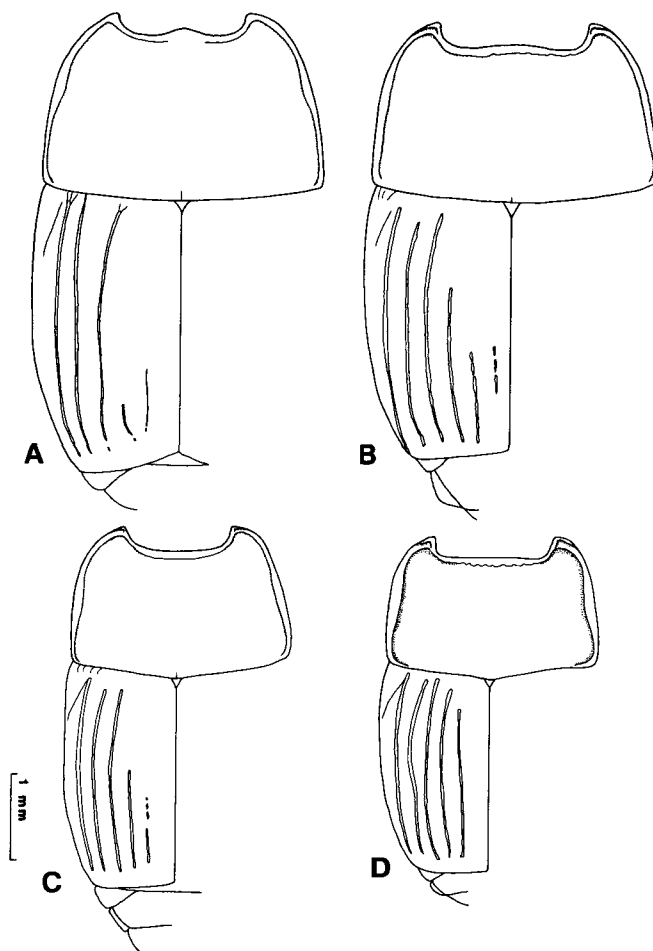


Fig. 55. *Platysoma (Platylister)* spp. Pronotum and left elytron. A: *P. (P.) atratum* Erichson. B: *P. (P.) cambodjense* Marseul. C: *P. (P.) horni* Bickhardt. D: *P. (P.) pini* Lewis.

Platysoma (Platylister) atratum Erichson, 1834
(Fig. 55, 56, 57, 58)

Hister parallelipedus Dejean, 1821: 48 (nom. nud.), given as synonym by Marseul, 1857: 472.

Platysoma atratum Erichson, 1834: 110.

Platysoma parallelepipedum (sic): Dejean, 1837: 143.

Platylister atratus: Lewis, 1905b: 13; Hisamatsu, 1985b: 229; Sawada, 1988: 40 [Miyake-jima, Izu Isles].

Platysoma buteanum Desbordes, 1922: 7, synonymized by Cooman, 1948: 132.

Platysoma (Platylister) atratum: Mazur, 1984: 228.

Japanese name: Indo-naga-emma-mushi.

Description. Body somewhat convex, oblong, black and shining; tibiae dark brown; tarsi and antennae reddish brown. Body length, PPL, 4.69 – 6.25 mm (5.62 ± 0.11 , $n=14$), PEL, 4.06 – 5.56 mm (4.99 ± 0.10 , $n=14$), Width, 2.69 – 3.56 mm (3.16 ± 0.07 , $n=14$). Biometric data are given in Table 8.

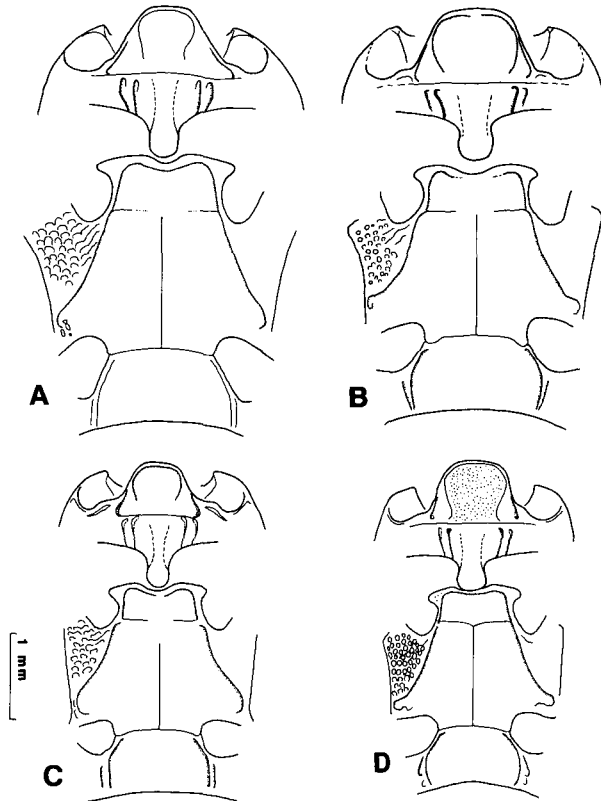


Fig. 56. *Platysoma (Platylister)* spp. Prosternum, mesosternum, metasternum and 1st abdominal sternum. A: *P. (P.) atratum* Erichson. B: *P. (P.) combodjense* Marseul. C: *P. (P.) horni* Bickhardt. D: *P. (P.) pini* Lewis.

Surface of head (Fig. 57A) even but feebly depressed on apical 1/2; frontal stria usually interrupted at each apical angle behind eye, and well impressed and carinate; disk evenly clothed with fine punctures which are separated by about 3 times their diameter. Labrum transverse oblong, its anterior margin strongly emarginate at middle. Mandibles stout, short, and with longitudinal impression on dorsal surface.

Pronotal sides (Fig. 55A) parallel on basal 1/3, convergent forward on apical 2/3, then strongly convergent on apical 1/6; emarginated portion of anterior margin bisinuate with distinctly acute angle at middle (Fig. 55A). Marginal pronotal stria complete laterally and weakly impressed, its apical end curved at apical angle and shortly extending inwardly. Pronotal lateral stria deeply impressed and complete laterally, and narrowly interrupted at middle on anterior portion; disk densely clothed with fine punctures which are denser than those of the head.

Epipleural and elytral marginal striae weakly impressed and complete, the apical end of the elytral stria extending along apical margin of elytron to middle. Epipleura even, and sparsely clothed with fine punctures. Subhumeral stria absent. Oblique humeral stria (Fig. 55A) present on basal 1/3. First – 3rd elytral dorsal striae complete and well impressed, the 3rd weakly bent inwardly on basal 1/2. Fourth dorsal stria short and present on apical 1/6. Fifth often reduced basally, but usually present on apical 1/3. Disk of elytra evenly and densely covered with fine punctures which are as dense as on the pronotum.

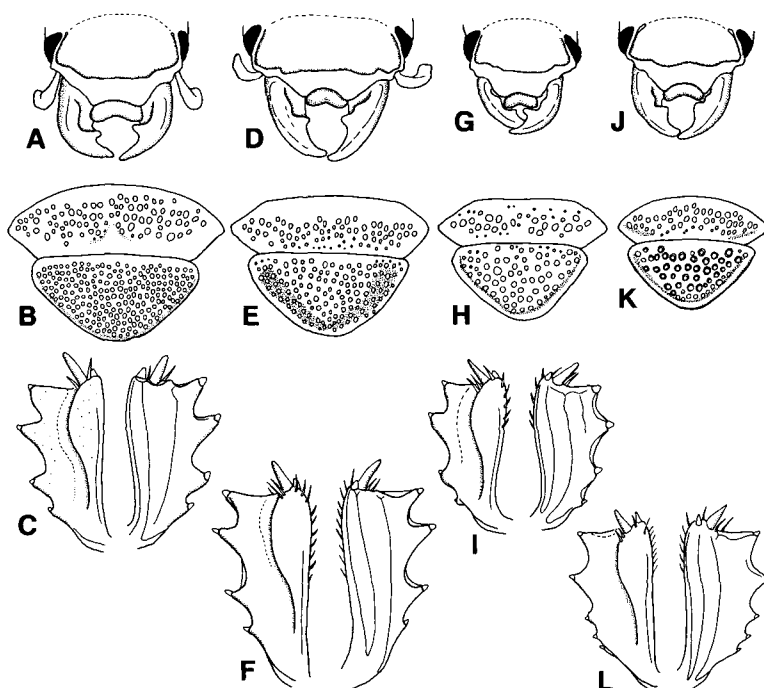


Fig. 57. *Platysoma (Platylister)* spp. A, D, G, J: Heads, frontal view. B, E, H, K: Propygidia and pygidia. C, F, I, L: Protibiae, dorsal view (left) and ventral view (right). A – C: *P. (P.) atratum* Erichson. D – F: *P. (P.) cambodjense* Marseul. G-I: *P. (P.) horni* Bickhardt. J – L: *P. (P.) pini* Lewis.

Propygidium (Fig. 57B) irregularly covered with large punctures, which become finer along the posterior margin and on a narrow longitudinal median band; interspace among the large punctures evenly and densely covered with fine punctures. Surface of propygidium even. Pygidium densely covered with large punctures which are separated by 0.3 times their diameter; interspace among the large punctures sparsely clothed with fine punctures; narrow band along posterior margin feebly elevated.

Anterior margin of prosternal lobe (Fig. 56A) round; marginal stria of lobe deeply impressed, its posterior end strongly curved inwardly; disk flat, densely covered with coarse punctures which are separated by their own diameter. Prosternal keel narrow and without carinal stria; disk evenly covered with coarse punctures; basal apex round. Lateral stria and lateral marginal stria deeply impressed and carinate.

Anterior margin of mesosternum strongly emarginate at middle; marginal stria well impressed and complete, rarely interrupted at middle of anterior portion; disk densely and finely punctate. Meso-metasternal suture weakly impressed. Punctuation of intercoxal disk of metasternum slightly finer than mesosternal ones. Lateral metasternal stria deeply impressed, extending obliquely and posteriorly, its apical end attaining near metacoxa. Lateral disk densely covered with large and shallow punctures, which are usually fused with each other on apical 1/2.

Intercoxal disk of 1st abdominal sternum with punctuation similar to that of intercoxal disk of metasternum; 2 lateral striae present on each lateral side.

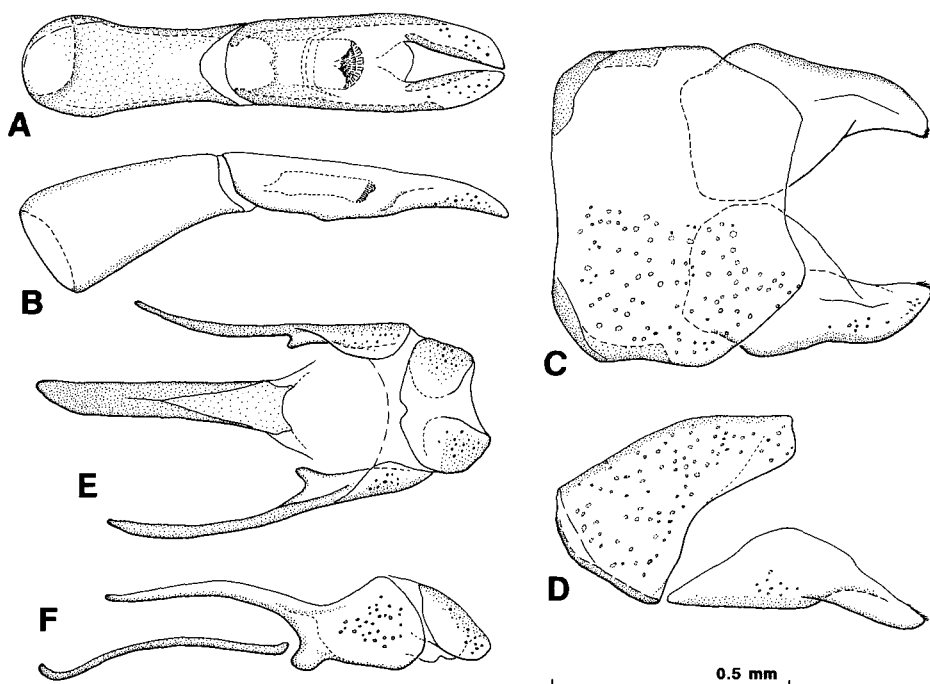


Fig. 58 *Platysoma (Platylistra) atratum* Erichson. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

Table 8. Biometric data of *Platysoma (Platylister) atratum* Erichson and *P. (Platylister) cambodjense* Marseul.

	<i>P. atratum</i>	<i>P. cambodjense</i>
APW	1.31-1.81 (1.52±0.03) 14	1.50-2.00 (1.74±0.05) 8
PPW	2.50-3.44 (3.05±0.06) 14	2.75-3.63 (3.20±0.08) 8
PL	1.50-2.19 (1.90±0.04) 14	1.63-2.06 (1.88±0.05) 8
EL	2.25-3.00 (2.74±0.05) 14	2.31-3.00 (2.72±0.07) 8
EW	2.69-3.56 (3.16±0.07) 14	2.81-3.75 (3.33±0.09) 8
ProW	1.69-2.25 (1.97±0.04) 14	1.56-2.19 (1.88±0.06) 8
ProL	0.44-0.69 (0.59±0.02) 14	0.44-0.56 (0.52±0.02) 8
PyL	0.63-0.94 (0.80±0.03) 14	0.63-0.94 (0.83±0.03) 8
PTL	0.94-1.25 (1.17±0.03) 14	1.00-1.50 (1.23±0.05) 8
MSTL	0.81-1.19 (1.03±0.03) 14	0.94-1.25 (1.13±0.04) 8
MTTL	1.00-1.31 (1.21±0.03) 14	1.19-1.69 (1.41±0.06) 8

Protibia (Fig. 57C) with 4 denticles on outer margin. Mesotibia with 4 denticles, the median 2 denticles large. Metatibia with 4 denticles, the basal one very small.

Male genitalia as shown in Fig. 58.

Specimens examined. [Kyūshū] Kagoshima-ken: 1♂ 1♀, Sata-misaki, Sata, 3/v/1981, Y. Takai; 1 ex, Ditto, 5/v/1985, Y. Takai; 1♀, Sata, 1/vii/1984, S. Masuda.

[Nansei Isles] Yaku-shima Is.: 1♂, Miya-no-ura, 28/vii/1969, H. Nara (NA). Tokara-Nakano-shima Is.: 1 ex., Nakano-shima, 22/vii/1986, H. Fujita (NA). Amami-Ōshima Is.: 2♀♀, Naze, 27/v/1978, H. Makihara; 1 ex., Kinsakubaru, 10/ix/1983, M. Ōhara; 1♂, Shinokawa, 11/v/1953, T. Shiraki (NA). Tokuno-shima Is.: 2♂♂, Yonama, 12/iv/1964, H. Kawai. Okinawa-Hontō Is.: 1♂, Yona, 30/vi/1976, H. Makihara; 1♂, Kudeken, Chinen-mura, 22/v/1974, H. Makihara. Takekomi Is.: 1 ex., 19/iii/v983, T. and T. Nakane (NA).

[Taiwan] 1♀, Nanzan-kei, 30/iv/1965, T. Shirōzu (NA).

Distribution. Japan (Izu Isles; Nansei Isles); India; Burma; Viet-Nam; Laos; Taiwan; East China.

Remarks. *Platysoma atratum* superficially resembles *P. horni*; however, the former can easily be distinguished by the different striation of the elytra and the pronotal stria which is interrupted behind the head.

This species frequently occurs in decaying pineapple and banana; it was sometimes collected also under bark and in rotting wood, and, according to Sawada (1988), under decaying Taro, *Colocasia esculenta*.

Platysoma (Platylister) cambodjense Marseul, 1864
(Fig. 55, 56, 57, 59)

Platysoma cambodjense Marseul, 1864a: 300 [Cambodia].

Platylister cambodjensis: Lewis, 1905b: 13.

Platylister niponensis Lewis, 1906b: 398 [Japan: Kyoto (=Kyōto), but this locality is corrected to true locality "Kyūshū" in Lewis, 1907]; 1907b: 98 [Kyūshū], synonymized by Bickhardt, 1920b: 61.

Platysoma (Platylister) cambodjense: Mazur, 1984: 228.

Japanese name: Oni-naga-emma-mushi.

Description. Body somewhat convex, oblong, black and shining; tibiae, tarsi,

antennae and mouthparts dark brown. Body length, PPL, 4.50 – 6.06 mm (5.34 ± 0.14 , $n=8$), PEL, 4.19 – 5.44 mm (4.88 ± 0.13 , $n=8$), Width, 2.81 – 3.75 mm (3.33 ± 0.09 , $n=8$). Biometric data are given in Table 8.

Head (Fig. 57D) broad, and deeply and broadly excavate; frontal stria weakly impressed, complete and sinuate behind antennal cavity; disk evenly clothed with fine punctures which are separated by 2 – 4 times their diameter. Labrum transverse oblong, its anterior margin feebly emarginate inwardly. Mandible stout, well developed and with a denticle on inner margin.

Pronotal sides (Fig. 55B) convergent forward slightly on basal 2/3 and then strongly. Apical angles acute. Marginal pronotal stria complete laterally and its apical end united with lateral pronotal stria. Lateral pronotal stria strongly carinate and complete. Disk of pronotum densely covered with fine punctures which are separated by about 4 times their diameter. Antescutellar area with a longitudinal puncture which is lightly impressed.

Epipleura of elytra shining and scattered with microscopic punctures. Marginal epipleural stria well impressed and usually complete, sometimes interrupted at middle. Marginal elytral stria deeply impressed, carinate and complete. Interval between these striae with a short stria medially. Subhumeral stria absent. Oblique humeral stria (Fig. 55B) lightly impressed on basal 1/3. First – 3rd dorsal striae complete, and deeply and broadly impressed. Fourth dorsal stria present on apical 1/2. Fifth dorsal on apical 1/3, its basal 1/2 often represented by several punctures. Sutural stria represented by several punctures and present on medio-apical 1/5. Surface of elytra sparsely clothed with microscopic punctures.

Propygidium (Fig. 57E) densely covered with large, deep and longitudinal oblong punctures which are absent along margin. Pygidium densely covered with large, deep and hexagonal punctures which are twice as large as the punctures of the propygidium; surface feebly convex medially and posterior margin strongly elevated.

Anterior margin of prosternal lobe (Fig. 56B) broadly truncate. Marginal stria of lobe well impressed, narrowly interrupted at middle, and its posterior end strongly bent inwardly. Disk of lobe irregularly and finely punctate, the punctures being separated by about 3 (1 – 5) times the diameter. Prosternal keel broad, without carinal stria; punctuation of surface similar to that of the lobe. Lateral and lateral marginal striae deeply impressed and carinate.

Anterior margin of mesosternum (Fig. 56B) strongly emarginate medially; marginal stria complete and carinate laterally and broadly interrupted anteriorly; disk densely and moderately punctate, the punctures being separated by about their own diameter. Meso-metasternal suture lightly impressed and obtusely angulate at middle. Punctuation of intercoxal disk of metasternum similar to that of mesosternum. Lateral metasternal stria deeply impressed, extending obliquely and posteriorly, its apical end attaining at apical 1/6 of metepisternal suture. Lateral disk densely covered with large, shallow and round punctures, which are usually fused with each other medio-apically.

Intercoxal disk of 1st abdominal sternum with punctuation similar to that of the intercoxal disk of the metasternum; 1 lateral stria present on each lateral side; the lateral disk densely with longitudinal impressions.

Protibia (Fig. 57F) with 4 large denticles on outer margin; interval between 2 median denticles broad. Mesotibia with 4 denticles. Metatibia with 3 denticles.

Male genitalia as shown in Fig. 59.

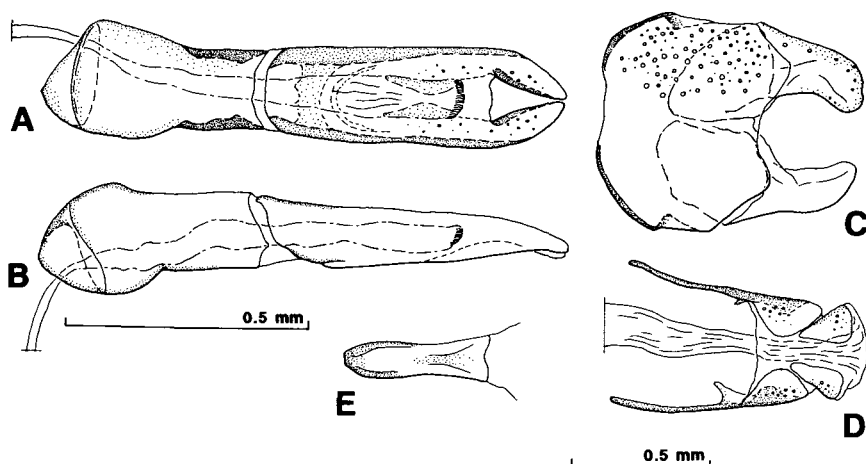


Fig. 59 *Platysoma (Platylister) cambodjense* Marseul. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Male genitalia, 9th and 10th tergites, dorsal view. E: Male genitalia, 9th sternum (spicule), ventral view.

Specimens examined. [Nansei Isles] Yaku-shima Is.: 1♂, 15/vii/1988, K. Nakamine; 1♂, Miyanoura, 13/vii/1970, M. Ishida; 1 ex., Kosugi-dani, 14/vii/1970, T. Watanabe (NSMT); 2 exs., Ôkawa, 22/vii/1975, M. Akiyama (NSMT); 1 ex., Ditto, 28/vii/1975, H. Akiyama; 1 ex., Shiratani, 21/vii/1975, H. Akiyama; 1♀, Kurio, 6/viii/1958, Y. Asano. Tokara-Nakano-shima Is.: 1 ex., Nakano-shima, 26/iv/1975, H. Irie (NSMT); 1♂, 1 ex., Ditto, 25/vi/1972, 24/vi/1973, H. Makihara. Amami-Ôshima Is.: 1 ex., Ikari, 29/v/1960, T. Shibata (NSMT); 1♂, Kinsakubaru, 30/vi/1984, M. Ôhara. Okinawa-Hontô Is.: 1 ex., Yona, Kunigami, 13/vi/1973, Y. Kurosawa (NSMT).

Distribution. Japan (Kyûshû, Nansei Isles); Cambodia; Burma; Taiwan; North India; Viet-Nam; Laos; Thailand; Bhutan.

Remarks. *Platysoma cambodjense* is a relatively large species, but rare small specimens of this species resemble *P. pini*; however, they can easily be recognized mainly by the striation of the elytra (see also the key and the description).

Little is known about the habitat of this species. It frequently occurs under bark.

Platysoma (Platylister) horni Bickhardt, 1913
(Fig. 55, 56, 57)

Platysoma horni Bickhardt, 1913: 169.

Platylister horni: Lewis, 1915: 55.

Platysoma (Platylister) horni: Mazur, 1984: 230 [catalogued].

Japanese name: Horn-naga-emma-mushi.

Description. Body somewhat oblong, black and shining; tarsi and antennae reddish brown. Body length, PPL, 4.63 – 4.81 mm (4.72 ± 0.07 , $n=2$), PEL, 4.06 – 4.44 mm (4.25 ± 0.13 , $n=2$), Width, 2.63 – 2.81 mm (2.72 ± 0.07 , $n=2$). Biometric data are given in Table 9.

Table 9. Biometric data of *Platysoma (Platylister) horni* Bickhardt and *P. (Platylister) pini* Lewis.

	<i>P. horni</i>		<i>P. pini</i>	
APW	1.19-1.31	(1.25±0.04) 2	1.31-1.50	(1.41±0.02) 17
PPW	2.50-2.75	(2.63±0.09) 2	2.38-2.75	(2.57±0.03) 17
PL	1.50-1.63	(1.56±0.04) 2	1.38-1.63	(1.50±0.02) 17
EL	2.31-2.56	(2.44±0.09) 2	2.00-2.44	(2.22±0.03) 17
EW	2.63-2.81	(2.72±0.07) 2	2.44-2.75	(2.60±0.02) 17
ProW	1.56-1.75	(1.66±0.07) 2	1.38-1.75	(1.54±0.03) 17
ProL	0.44	2	0.38-0.56	(0.44±0.01) 17
PyL	0.75-0.81	(0.78±0.02) 2	0.63-0.81	(0.70±0.01) 17
PTL	0.88	2	0.81-1.13	(1.02±0.02) 16
MSTL	0.81-0.94	(0.88±0.04) 2	0.81-1.19	(0.93±0.02) 16
MTTL	1.00-1.06	(1.03±0.02) 2	1.00-1.25	(1.15±0.02) 16

Frontal stria of head (Fig. 57G) deeply impressed, carinate and complete, the lateral portions convergent basally; the disk feebly depressed on apical 1/2 and evenly with fine punctures which are separated by about 4 times their diameter. Labrum transverse, its anterior margin feebly curved inwardly.

Pronotal sides (Fig. 55C) nearly straight and weakly convergent forward on basal 3/4, thence strongly arcuate and convergent apically. Apical angles acute. Marginal pronotal stria complete laterally. Pronotal lateral stria complete and subcarinate, the lateral portion and median part of the anterior portion distant from the pronotal margin. Disk densely clothed with fine punctures which are separated by 2 – 3 times their diameter.

Epipleural marginal stria weakly impressed and complete. Elytral marginal stria straight and deeply carinate. Oblique humeral stria (Fig. 55C) present on basal 1/3. First – 3rd dorsal striae deeply impressed and complete, the 2nd basal end being somewhat shortened. Fourth stria impressed on apical 1/2. Fifth dorsal stria present on apical 1/3, its basal end often abbreviated. Surface of elytra with punctation similar to that of the pronotum.

Propygidium (Fig. 55H) irregularly covered with coarse, round and deep punctures which are separated by 0.5 times their diameter; interspace among the coarse punctures finely and sparsely punctate, the punctures becoming denser along the posterior margin. Pygidium densely covered with coarse, round and deep punctures which become somewhat larger than those of the propygidium and are separated by 0.3 times their diameter; interspace among the coarse punctures and a narrow band along the posterior margin scattered with fine punctures, the band feebly elevated.

Prosternal lobe (Fig. 56C) broad and even; apical margin truncate; marginal stria well impressed and somewhat distant from the margin, its posterior ends convergent inwardly; disk irregularly and finely punctate, the punctures being separated by about 3 (1 – 5) times the diameter. Prosternal keel even; disk finely clothed with punctures which become sparser than those of the lobe; lateral stria and lateral marginal stria deeply impressed and carinate.

Anterior margin of mesosternum (Fig. 56C) feebly emarginate medially; marginal stria complete laterally and narrowly interrupted at middle on anterior portion; disk evenly clothed with fine punctures which are separated by about 3 times their diameter. Meso-metasternal suture absent. Punctation of intercoxal disk of metasternum similar to

that of the mesosternum; lateral metasternal stria deeply impressed, extending obliquely and posteriorly, its apical end irregularly curved and attaining near the metacoxa. Lateral metasternal disk with oblique, oval and shallow punctures on medio-basal 1/2, elsewhere with semicircular, large and shallow punctures, which become smaller apically, with moderate punctures intermingled.

Intercoxal disk of 1st abdominal sternum with punctation similar to that of the mesosternum; 2 lateral striae present on each side, the outer one abbreviated on basal 1/3.

Protibia (Fig. 57I) with 4 denticles on outer margin; interval between 2nd and 3rd denticles broad. Mesotibia with 4 denticles. Metatibia with 3 denticles.

Specimens examined. [Nansei Isles] Ishigaki Is.: 1♂, xi-xii/1952, G. E. Bohart (BSM); 1 ex., Banna-dake, 5/vii/1974, H. Takizawa.

Distribution. Japan (Nansei Isles: Ishigaki Is.); Taiwan.

Remarks. *Platysoma horni* is easily recognized by the striation of the elytra.

Platysoma (Platylister) oberthuri Cooman, 1948

Platysoma oberthuri Cooman, 1948: 132; Mazur, 1984: 230 [catalogued].

Platysoma mimicum Desbordes, 1922: 235 (nec Lewis, 1914a: 239), correctly detected by Cooman, 1948: 132.

Platysoma (Platylister) oberthuri: Mazur, 1984: 231.

Japanese name: Amami-naga-emma-mushi.

Specimens examined. No specimen has been available for my study.

Distribution. Japan (Nansei Isles: Amami-Ōshima Is.).

Platysoma (Platylister) pini Lewis, 1884
(Fig. 55, 56, 57, 60)

Platysoma pini Lewis, 1884: 133 [Japan].

Platylister pini: Hisamatsu, 1985b: 229, pl. 41, no. 29.

Platysoma (Platylister) pini: Mazur, 1984: 231.

Japanese name: Matsu-naga-emma-mushi.

Description. Body oblong-oval, black and shining; tibiae, tarsi, mouthparts and antennae rufopiceous. Body length, PPL, 4.00 – 4.75 mm (4.36 ± 0.05 , $n=17$), PEL, 3.63 – 4.31 mm (4.03 ± 0.04 , $n=17$). Width 2.44 – 2.75 mm (2.60 ± 0.02 , $n=17$). Biometric data are given in Table 9.

Frontal stria of head (Fig. 57J) feebly carinate and complete; the disk strongly depressed on apical 1/2 and densely covered with fine punctures which are separated by about 1.5 (1 – 2) times the diameter. Labrum transverse, its anterior margin feebly emarginate inwardly.

Pronotal lateral sides (Fig. 55D) convergent forward weakly on basal 5/6 and then strongly and arcuately. Apical angles acute. Marginal pronotal stria complete laterally. Pronotal lateral stria complete and strongly carinate, the lateral portion broadly distant from the margin and the anterior portion densely carinate. Disk densely and finely punctate, the punctures being separated by 2 – 5 times their diameter.

Epipleural marginal stria deeply impressed and carinate, and present on basal 1/2. Elytral marginal stria complete, deeply impressed and carinate, the apical end extending along anterior margin and attaining to apical end of the 2nd dorsal stria. Another stria complete and deeply carinate between epipleural and elytral marginal striae. Oblique humeral stria (Fig. 55D) present on basal 1/4. First – 4th dorsal elytral striae complete and deeply impressed, the basal portion of 4th being a little shortened. Fifth dorsal stria abbreviated on basal 1/6. Sutural stria represented by several coarse punctures on medio-apical 1/4. Disk densely and finely punctate, the punctures being much sparser than those of the pronotum.

Propygidium (Fig. 57K) irregularly covered with ocelloid, large, oblong and shallow punctures; interspace among the ocelloid ones sparsely clothed with fine punctures. Pygidium densely covered with ocelloid, large, round and shallow punctures, which are separated by about 0.5 times their diameter; interspace among the ocelloid ones sparsely and finely punctate; narrow area along the posterior margin strongly elevated and sparsely and finely punctate.

Anterior margin of prosternal lobe (Fig. 56D) truncate, its marginal stria well impressed and complete, the posterior end extending inwardly and attaining to suture between prosternal keel and lobe; disk evenly covered with fine punctures which are separated by about 4 times their diameter. Prosternal keel broad, even and sparsely and finely punctate; lateral stria and lateral marginal stria deeply impressed and carinate.

Anterior margin of mesosternum (Fig. 56D) feebly emarginate medially; marginal stria complete laterally and very weakly impressed medially on anterior portion; punctation of disk similar to that of the prosternal keel. Meso-metasternal suture lightly

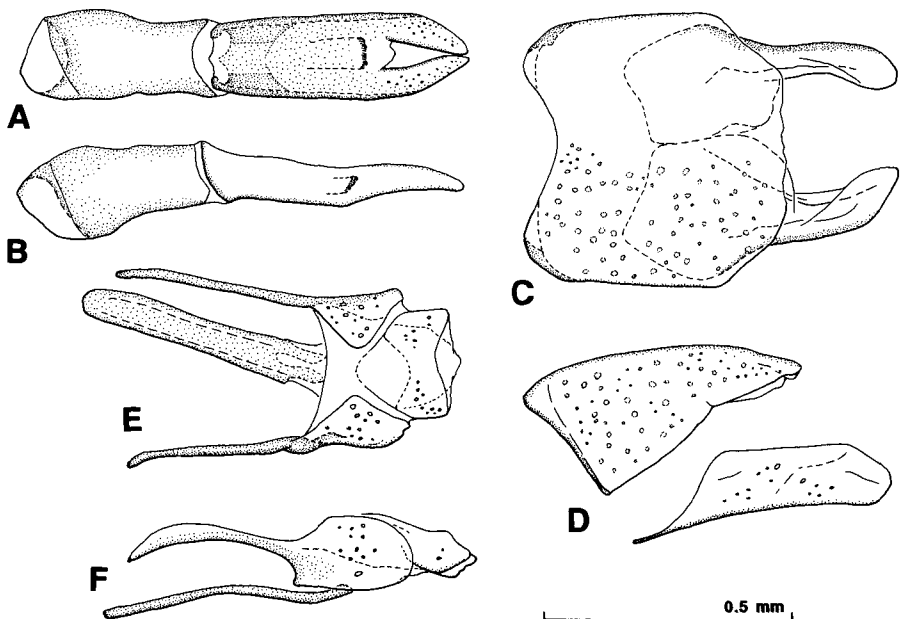


Fig. 60. *Platysoma (Platylister) pini* Lewis. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

impressed. Punctuation of intercoxal disk of metasternum similar to that of the mesosternum; lateral metasternal stria deeply impressed, extending obliquely and posteriorly; lateral metasternal disk densely covered with large and shallow punctures, which are often fused together.

Intercoxal disk of 1st abdominal sternum with punctuation similar to that of the mesosternum; 1st abdominal stria completely present, and another fragmentary stria impressed on apical 1/2.

Protibia (Fig. 57L) with 5 denticles on outer margin. Mesotibia with 4 denticles on outer margin, the apical 2 set close near the apical angle of tibia. Metatibia with 3 denticles on outer margin, the apical 2 present on the apical angle of tibia.

Male genitalia as shown in Fig. 60.

Specimens examined. [Hokkaidô] 1 ex., Mt. Kariba, Shimamaki, 6-8/viii/1988, M. Ôhara, T. Tanabe and K. Sayama.

[Honshû] Aomori-ken: 1 ex., Rangan-no-mori, Nishi-Tsugaru, 24/vii/1977, A. Abe (NA). Fukushima-ken: 3 exs., Karasugawa-rindô, Moniwa, Iizaka-chô, 16/vi, 6, 22/vii/1976, K. Tazoe. Miyagi-ken: 3 exs., Akiu, Moriyasu, 24/vi/1951, no collector's name (NSMT). Tochigi-ken: 1 ex., Kawamata, Kuriyama-mura, 14/vii/1990, K. Satoh (TPM). Tôkyô-to: 1 ex., Takao-san, 27/vi/1971, K. Masumoto. Gifu-ken: 1 ex., Hokiwaki, Mino-shi, 23/vi/1979, Y. Takai. Kyôto-fu: 2 exs., Mt. Daihi, 15/vi/1941, K. Sakaguchi (NA). Ôsaka-fu: 2 exs., Katsuno-ji, Minô, 2/viii/1949, K. Sawada (NA). Hyôgo-ken: 1 ex., Hataganaru, 24, 25/v/1955, T. Nakane (NA).

[Kyûshû] Miyazaki-ken: 1 ex., Takachiho-no-mine, 10/vii/1984, M. Ôhara.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Taiwan. New to Hokkaidô.

Remarks. *Platysoma pini* resembles *P. cambodjense*, but differs from the latter externally by the smaller average size and the different striation of the elytra (see the description).

Little is known about the habitat of this species. *P. pini* is frequently collected under the bark of the pine trees.

SUBGENUS CYLISTER COOMAN, 1941

Cylister Cooman, 1941: 307 [type species: *Hister elongatus* Olivier, 1789: 16, nec Thunberg, 1787: 33, originally designated].

Platysoma (Cylister) lineicollis Marseul, 1873 (Fig. 61, 62, 63)

Platysoma lineicollis Marseul, 1873: 223 [Kiu-Siu et Nippon].

Clistosoma lineicolle: Lewis, 1905b: 18.

Cylister lineicolle: Cooman, 1948: 309.

Japanese name: Naga-emma-mushi.

Description. Body oblong, black and shining; femora, tibiae, tarsi and antennae rufopiceous. PPL, 2.84 – 3.50 mm (3.28 ± 0.04 , n=20); PEL, 2.52 – 3.17 mm (2.97 ± 0.04 , n=20). Width, 1.34 – 1.64 mm (1.55 ± 0.02 , n=20). Biometric data are given in Table 10.

Frontal stria of head (Fig. 61A) deeply impressed, carinate and complete. Disk of head depressed on apical 1/2 and sparsely covered with coarse punctures which are

separated by 3 – 4 times their diameter; interspace among the coarse punctures evenly and finely punctate; these coarse and fine punctures becoming denser and finer apically. Labrum transverse, its anterior margin feebly curved inwards.

Pronotal sides (Fig. 61B) straight on basal nine-tenths, thence strongly and arcuately convergent forward. Apical angles acute. Marginal pronotal stria complete laterally. Pronotal lateral stria carinate and complete, the anterior portion nearly straight, interrupted behind eyes, and sometimes interrupted at middle; the lateral end of the portion often extending obliquely and posteriorly. Disk evenly covered with coarse punctures which become coarser and somewhat more oblong on lateromedian 1/6 and finer narrowly along lateral stria; median 1/3 with fine punctures intermingled.

Epipleura even, not concave. Epipleural marginal stria lightly impressed, complete and broadly distant from outer margin. Elytral marginal stria complete and deeply impressed. Subhumeral striae absent. Oblique humeral stria (Fig. 61B) present on basal 1/3. First – 4th dorsal striae deeply impressed and complete. Fifth dorsal stria present on apical 2/5, its basal portion usually represented by several punctures. Sutural stria present on apical 1/2, its apical portion somewhat shortened. Surface of elytra evenly clothed with fine punctures which are separated by about 3 times their diameter; apical transversal band sparsely and coarsely punctate.

Propygidium (Fig. 61C) irregularly covered with coarse, round and shallow punctures; interspace among the coarse punctures finely and sparsely punctate. Pygidium densely covered with coarse, round and somewhat deep punctures on basal 1/2, which are separated by 0.5 – 1 times the diameter; interspace among the coarse ones and apical 1/2 of disk clothed with fine punctures which are separated by 4 – 6 times their diameter.

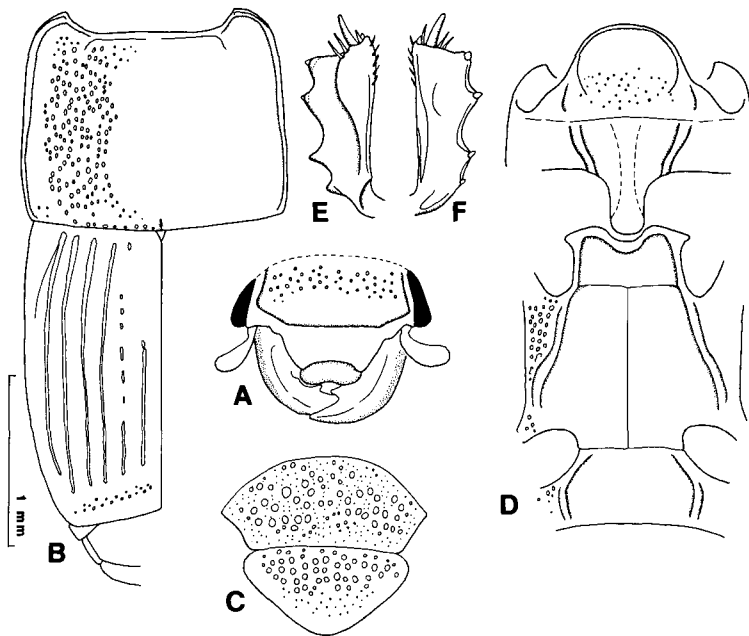


Fig. 61. *Platysoma (Cylister) lineicollis* Marseul. A: Head, dorsal view. B: Pronotum and left elytron. C: Propygidium and pygidium. D: Prosternum, mesosternum, metasternum and 1st abdominal sternum. E: Protibia, dorsal view. F: Ditto, ventral view.

Table 10. Biometric data of *Platysoma (Cylister) lineicollis* Marseul and *P. (Apobletes) shaumei* Marseul.

	<i>P. (Cylister) lineicollis</i>	<i>P. (Apobletes) shaumei</i>
APW	0.82-1.01 (0.95±0.01) 20	0.95-1.14 (1.01±0.04) 4
PPW	1.34-1.64 (1.52±0.02) 20	1.86-2.26 (2.04±0.08) 4
PL	0.98-1.24 (1.15±0.01) 20	0.92-1.14 (1.02±0.04) 4
EL	1.34-1.83 (1.62±0.03) 20	1.50-1.80 (1.67±0.06) 4
EW	1.34-1.64 (1.55±0.02) 20	1.90-2.32 (2.08±0.08) 4
ProW	0.82-1.11 (1.00±0.02) 20	1.11-1.31 (1.19±0.04) 4
ProL	0.33-0.52 (0.44±0.01) 20	0.36-0.43 (0.39±0.02) 4
PyL	0.46-0.62 (0.53±0.01) 20	0.46-0.49 (0.47±0.01) 4
PTL	0.59-0.72 (0.64±0.01) 20	0.59-0.72 (0.63±0.03) 4
MSTL	0.46-0.69 (0.60±0.01) 20	0.49-0.62 (0.55±0.03) 4
MTTL	0.62-0.78 (0.70±0.01) 20	0.62-0.78 (0.70±0.03) 4

Prosternal lobe (Fig. 61D) broad and even; its apical margin round; marginal stria carinate and impressed, its posterior ends inwardly bent and convergent medially; disk densely covered with moderate punctures which are separated by their own diameter. Prosternal keel narrow and elevated, its top even; carinal striae wanting.

Anterior margin of mesosternum (Fig. 61D) broadly and deeply emarginate; marginal stria complete and strongly carinate; disk shining, and sparsely and finely punctate. Meso-metasternal suture lightly impressed. Punctuation of intercoxal disk of metasternum similar to that of the mesosternum; lateral metasternal stria deeply impressed, extending posteriorly and obliquely, its apical end attaining to near the metacoxal cavity; another lateral stria (post-mesocoxal stria) present outside the lateral stria; lateral disk densely covered with large, round and shallow punctures and with moderate ones intermingled, these punctures becoming finer apically.

Punctuation of intercoxal disk of 1st abdominal sternum similar to that of the intercoxal disk of the mesosternum; 2 lateral striae present, the outer stria abbreviated on basal 1/2.

Protibia (Fig. 61E, F) with 4 denticles on outer margin. Mesotibia with 3 denticles on outer margin, the apicalmost one bearing 2 spinules. Metatibia with 2 denticles, the apicalmost one with 2 spinules.

Male genitalia as shown in Fig. 62.

Specimens examined. [Honshû] Iwate-ken: 1 ex., Matsuo, 17-19/vii/1954, S. Takagi (EIHU). Fukushima-ken: 1 ex., Oyama, Wakamatsu, 14/v/1947, no collector's name. (NA); 4 exs., Mt. Aoki, northern Aizu, 1/xi/1948, K. Nagayama (NA); 3 exs., Kawanuma, Nozawa, 21/iii/1949, K. Nagayama (NA); 2 exs., Akaidani, 5/v/1949, K. Nagayama (NA); 3 exs., Yanaizu, Ônuma, 18/iv/1948, K. Nagayama (NA); 2 exs., Niizuru, Ônuma, 31/iv/1948, 6/iv/1949, K. Nagayama (NA); 1 ex., Takizawa Pass., Ikki, Wakamatsu, 14/iii/1948, Y. Kurosawa (NSMT); 1 ex., Yunohana, Tateiwa, Minami-Aizu, 6/v/1949, Y. Kurosawa (NSMT); 1 ex., Oyama, Wakamatsu, 14/v/1947, Y. Kurosawa (NSMT). Tôkyô-to: 1 ex., Mt. Takao, 26/vi/1960, S. Nomura (NSMT). Niigata-ken: 15 exs., Kurokawa, northern Echigo, 21/i, 2/iv, 20/v, 24/ix/1956, 1/xi/1957, 28/xii/1958, K. Baba (NA); 2 exs., Ditto, 1/vi/1958, H. Koike (NA). Sado Is.: 1 ex., Takachi V., 27/vii/1947, M. Iga (NSMT). Yamanashi-ken: 5 exs., Kiyosato, no date, Y. Kishii (NA); 1 ex., Agematsu, Mt. Koma, 12/vi/1949, A. Nagatomi (NA). Gifu-ken: 1 ex., Seki-shi, 13/xii/1976, Y. Takai; 1 ex., Yôrô-kôen, Yôrô, 6/v/1979, Y. Takai; 2 exs., Tachibana, Mino-shi, 16/iii/1979, Y. Takai. Shizuoka-ken: 1 ex., Mt. Amagi, Izu, 30/iii/1952, J. Aoki (NA). Aichi-ken: 4 exs., Nagoya, 4/v/1944, S. Ôsawa (NA); 1 ex., Nagoya, Owari, 4/v/1944, S. Ôsawa (NA); 2 exs., Okehazama, i/1946, M. Yasuda (NA). Ôsaka-fu: 1 ex., Hirano, 22/viii/1950,

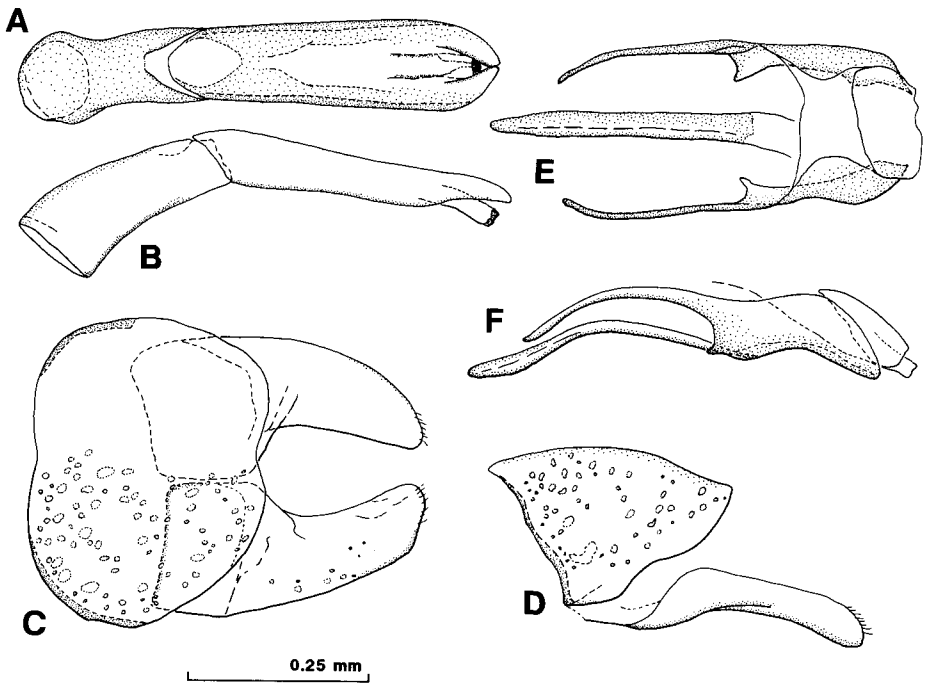


Fig. 62. *Platysoma (Cylister) lineicollis* Marseul. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

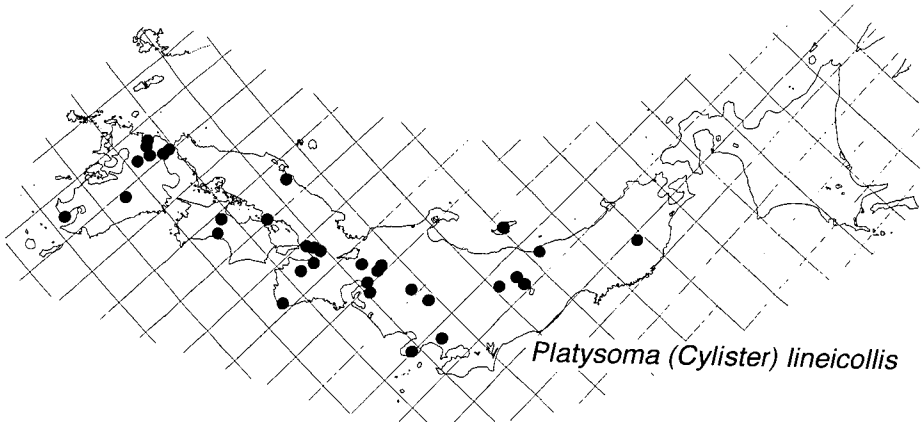


Fig. 63. Collection sites of *Platysoma (Cylister) lineicollis* Marseul in Japan.

F. Takahashi (NA); 3 exs., Minoo, 30/iv/2605 (=1945), no collector's name. (NA). Kyôto-fu: 1 ex., Sugi-tôge, 4/v/1983, H. Ashida. Hyôgo-ken: 2 exs., Mikage, Kôbe, 5, 6/i/1940, no collector's name. (NA); 1 ex., Kôbe, 27/iii/1930, J. E. A. Lewis (BSM); 1 ex., Motoyama-mura, near Kôbe, 27/x/1941, K. Suzuki (NA); 1 ex., Rokkô, 17/iii/1935, T. Nakane (NA). Wakayama-ken: 1 ex., Kii-Ôshima, 21-24/v/1964, T. Kumata (EIHU); 1 ex., Mt. Kôya, Kii, 4/viii/1940, T. Okada (NA). Okayama-ken: 1

ex., Tengu-yama, Tamano, 13/viii/1975, T. Aono (NA). Tottori-ken: 1 ex., Daisen, 18/vii/1952, T. Nakane (NA); 1 ex., Ditto, 18/x/1987, H. Daidô.

[Shikoku] Ehime-ken: 2 exs., Omogo, 9/xi/1953, T. Nakane (NA). Kôchi-ken: 1 ex., Mikazuki, Tosa, 10/iv/1938, M. Okamoto (NA).

[Kyûshû] Fukuoka-ken: 1 ex., Moji, 29/v/1947, C. Watanabe (EIHU); 2 exs., Ditto, 27/vii/1936, M. Uno (NA); 2 exs., Shimo, Hirokawa, no date, Y. Miyake (NA); 1 ex., Hakozaiki, 27/iii/1945, Y. Kurosawa (NA); 1 ex., Ditto (NSMT); 2 exs., Togamori, 28/v/1956, N. Gyôtoku (NA); 1 ex., Hôman-zan, 2/iv/1980, S. Ohmomo (NSMT); 1 ex., Wakasugi, 29/iii/1933, T. Shirôzu (NSMT); 1 ex., Mt. Shôji, 19/iv/1964, S. Nakao (NA). Miyazaki-ken: 1 ex., Shiiba-mura, 1/viii/1970, A. Nagai (NA). Kagoshima-ken: 2 exs., Kaimon-chô, 4/xi/1980, Y. Takai.

Distribution (Fig. 63). Japan (Honshû, Shikoku, Kyûshû); Taiwan.

Remarks. Being the only representative of the subgenus *Cylister* in Japan, *C. lineicollis* can easily be recognized by the subgeneric characteristics.

This species occurs under the bark of pine trees.

Platysoma (Cylister) elongatum (Thunberg, 1787)

Hister elongatus Thunberg, 1787: 33.

Hister oblongus Fabricius, 1792: 75 [South Sweden]; Thunberg, 1794: 63, synonymized by Kannar, 1979: 25.

Platysoma oblongus: Leach, 1817: 79.

Abbotia georgiana Leach, 1830: 157, synonymized by Waterhouse, 1868: 168.

Cylistosoma oblongum: Lewis, 1905b: 18.

Cylister oblongum: Kryzhanovskij, 1965: 103.

Cylister oblongus: Kusui, 1984: 7.

Kusui (1984) recorded a specimen collected from an imported larch wood at Naoetsu harbor, Jôetsu, Niigata-ken, Honshû, Japan.

Distribution. Europe; Siberia; Mongolia; Amurskiy Kray.

SUBGENUS APOBLETES MARSEUL, 1860

Apobletes Marseul, 1860: 852 [type species: *Apobletes tener* Marseul, 1860: 857, designated by Bickhardt, 1917: 136].

Platysoma (Apobletes) schaumei (Marseul, 1860) (Fig. 64, 65)

Apobletes schaumei Marseul, 1860: 857 [Burma].

Apobletes tener Marseul, 1860: 859; Hisamatsu, 1985b: 229 [Japan: Nansei Isles], synonymized by Reichardt, 1932: 114.

Apobletes schaumi (sic): Marseul, 1864a: 290.

Apobletes schaumi var. *tener*: Cooman, 1932b: 99.

Platysoma (Apobletes) schaumei: Mazur, 1984: 235.

Japanese name: Hirata-naga-emma-mushi.

Description. Body length, PPL, 3.37 – 4.12 mm (3.74 ± 0.15 , n=4); PEL, 2.84 – 3.40 mm (3.11 ± 0.10 , n=4). Width, 1.90 – 2.32 mm (2.08 ± 0.08 , n=4). Body strongly depressed (Fig. 64A), oblong-oval, shining and black; fomora, tibiae and tarsi reddish-brown. Biometric data are given in Table 10.

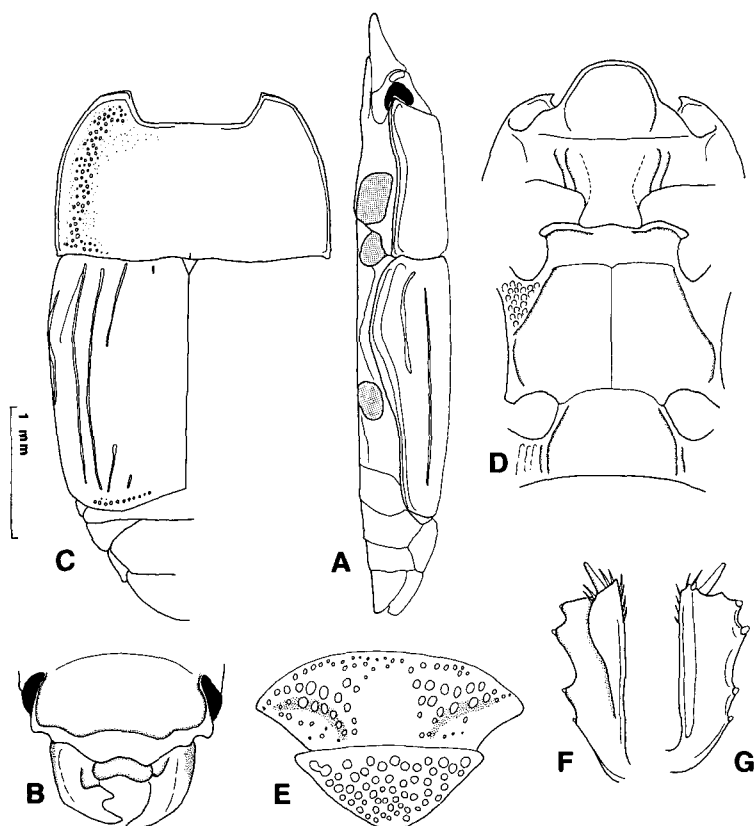


Fig. 64. *Platysoma (Apobletes) schaumii* Marseul. A: Adult, lateral view. B: Head, frontal view. C: Pronotum and left elytron. D: Prosternum, mesosternum, metasternum and 1st abdominal sternum. E: Propygidium and pygidium. F: Protibia, dorsal view. G: Ditto, ventral view.

Frontal stria (Fig. 64B) usually narrowly interrupted at each apical angle, sometimes complete, the anterior portion nearly straight and the lateral portion regularly curved. Disk of head excavate on apical 1/2 and evenly covered with fine punctures which are separated by about twice their diameter; interspace among the fine punctures evenly clothed with microscopic punctures. Labrum transverse oblong, its anterior margin emarginate medially. Mandible short, stout, with a large denticle on inner side.

Pronotal sides (Fig. 64C) convergent forward feebly, arcuately on basal 5/6 and then strongly arcuately. Marginal stria complete and carinate laterally. Pronotal lateral stria complete and narrowly interrupted at middle on anterior portion. Disk of pronotum sparsely clothed with microscopic punctures which are separated by 3 – 4 times their diameter and become larger on the lateral 1/6; the large punctures dense on lateral 1/4 of basal margin.

Epipleural and elytral marginal striae deeply carinate and complete. Epipleura somewhat excavate medially. Subhumeral stria deeply impressed on basal 1/2. Oblique humeral stria (Fig. 64C) present on basal 1/3. First and 2nd dorsal striae complete and sparsely crenate; 3rd dorsal stria broadly interrupted medio-apically, the interrupted portion 1/2 as long as elytron; 4th shortly present on apex; 5th and sutural striae absent.

Disk of elytra evenly clothed with microscopic punctures which are separated by about 5 times their diameter and become larger along apical margin.

Propygidium (Fig. 64E) with large and ocelloid punctures on anterolateral area, the punctures being separated by 0.3 times their diameter and becoming sparser medially; with microscopic punctures sparsely intermingled; surface feebly convex on lateral 1/4. Pygidium coarsely and deeply punctate, the punctures irregularly separated by 0.3 – 1 times the diameter; surface feebly depressed on each angle.

Prosternal lobe (Fig. 64D) broad and even, its anterior margin round; marginal stria complete, the posterior end inwardly extending on basal 1/2; disk of lobe sparsely clothed with microscopic punctures, and on lateral 1/4 of disk coarsely and densely punctate. Prosternal keel even and broad, without carinal stria; lateral stria and lateral marginal prosternal stria clearly impressed, the former complete and the latter shortened anteriorly; disk of keel with punctation similar to that of the lobe; posterior margin nearly straight.

Anterior margin of mesosternum feebly bisinuate (Fig. 64D), its marginal stria straight along the anterior margin, paralleled laterally, shortly interrupted on each basal angle, and narrowly interrupted medially; punctation of disk similar to that of prosternal keel. Meso-metasternal suture complete, obtusely angulate at middle. Intercostal disk of metasternum broad, even and clothed with microscopic punctures which are finer and sparser than those of the prosternal keel. Lateral metasternal stria extending obliquely

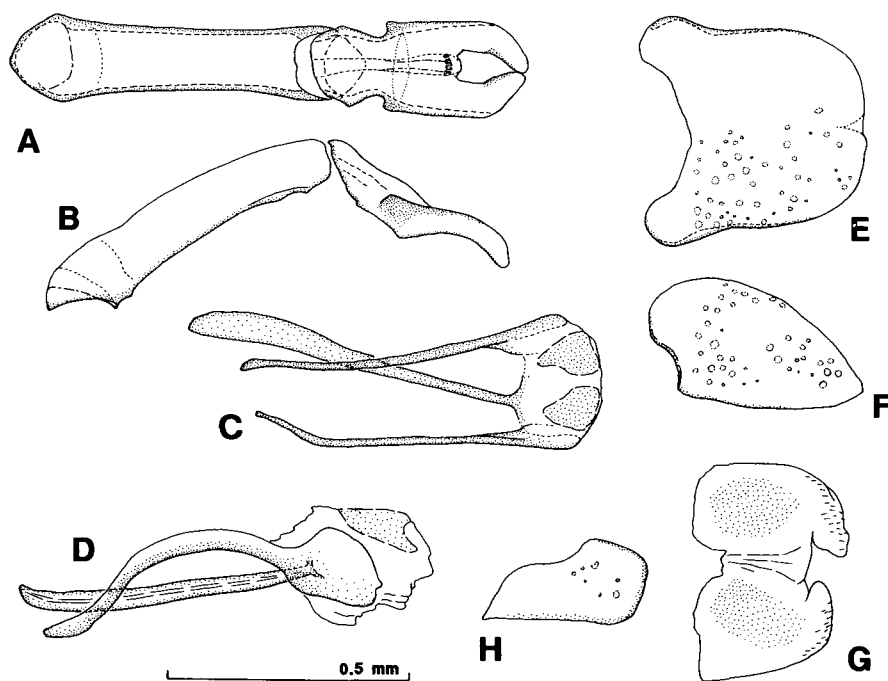


Fig. 65. *Platysoma (Apobletes) schaumei* Marseul. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. D: Ditto, lateral view. E: Male genitalia, 8th tergite. F: Ditto, lateral view. G: Male genitalia, 8th sternum, ventral view. H: Ditto, lateral view.

and posteriorly, and nearly complete but sometimes interrupted at apical 1/3, the apical end attaining near the metacoxa. Posterior mesocoxal stria wanting. Lateral metasternal disk densely covered with large, shallow and semi-circular punctures which are rounded basally; interspace among the large punctures intermingled with fine punctures.

Intercoxal disk of 1st abdominal sternum sparsely clothed with microscopic punctures which are separated by 3 – 5 times their diameter; with 2 striae on each side, the outer stria present on apical 1/2. Lateral disk with 8 – 9 longitudinal and large punctures. Lateral area of 2nd – 4th abdominal sterna coarsely and densely punctate.

Protibia (Fig. 64F, G) with 4 denticles on outer margin; interval between the 2nd and 3rd denticles broad. Mesotibia without denticle, but the apex expanded outwardly and with 2 spines.

Male genitalia as shown in Fig. 65.

Specimens examined. [Nansei Isles] Okinawa-Hontô Is.: 2♂♂ 1♀, Yona, 30/vi/1976, H. Makihara.

Distribution. Japan (Nansei Isles); Burma; Oriental Region.

Remarks. The only Japanese representative of the subgenus *Apobletes*, *A. shaumei* can easily be recognized by the subgeneric characteristics.

Little is known about habitat of this species. It occurs under bark.

GENUS EBLISIA LEWIS, 1889

Eblisia Lewis, 1889: 280 [type species: *Phelister lunaticus* Marseul, 1864a: 316].

Eurylister Bickhardt, 1920: 213, synonymized by Mazur, 1990: 748.

Chronus Lewis, 1914b: 285, synonymized by Mazur, 1990: 748.

Eblisia satzuma (Lewis, 1899)

Platysoma satzuma Lewis, 1899: 8; Ôhara, 1986: 94.

Eblisia satzuma: Ôhara, 1993c: 5.

Japanese name: Satsuma-naga-emma-mushi.

Distribution. Japan (Kyûshû, Nansei Isles).

TRIBE HISTERINI GYLLENHAL, 1808

GENUS HISTER LINNAEUS, 1758

Hister Linnaeus 1758: 358 [type species: *Hister unicolor* Linnaeus, 1758: 358, designated by Westwood, 1840: 22].

Histeranus Rafinesque, 1815: 112 (emend.).

Humister Houlbert et Monnot, 1923: 23, synonymized by Vienna, 1980: 257. Without type species.

Rhabdister Houlbert et Monnot, 1923: 35 (emend.).

Spilister Houlbert et Monnot, 1923: 22, synonymized by Cooman, 1947: 428. [type species: *Hister quadrimaculata* Linnaeus, 1758: 358].

Diagnosis. Body oval or oblong-oval, somewhat convex, usually shining and black, but rarely elytra with red maculation. Anterior margin of labrum usually nearly straight, but rarely projecting slightly and outwardly. Frontal stria of head usually entire and carinate, sometimes interrupted at middle of anterior portion. Pronotum with 1 or 2

lateral striae which are usually crenulate; outer lateral stria usually complete on side, sometimes reduced posteriorly, and broadly interrupted behind head; inner lateral stria usually entire. Marginal stria complete on side, and shortly or broadly interrupted behind head; area inside apical angles without excavation or coarse punctation. Epipleura of pronotum even or concave, often furnished with hairs. Antennal cavity not deep, at most moderately deep. Elytron completely with 3 or 4 dorsal striae, other striae usually reduced, rarely 2 or 5 striae complete. Degree of development of subhumeral striae variable; external subhumeral stria usually present, not entire, and sometimes absent, the stria usually deeply impressed, rarely formed as an arc and strongly crenulate; internal subhumeral stria usually impressed, but not complete. Epipleuron of elytron more or less concave, smooth and rarely punctate. Propygidium and pygidium with variable punctures, which are useful for species recognition. Anterior margin of mesosternum usually clearly emarginate, rarely nearly straight; its marginal stria usually well impressed and complete. Protibia moderately expanded; 3 – 5 denticles on outer margin. Outer margin of meso- and metatibiae with 2 rows of setae. Aedeagus of male genitalia slender cylindrical, usually depressed, and slit on midline of dorsal surface; the apical portion of dorsal surface often with small lobes along midline; median lobe without sclerotized median armature. Spermatheca of female genitalia consisting of several (4 – 8) receptacles on vagina, the receptacles slender, not coiled; bursa copulatrix usually sclerotized with no function as a sack.

Remarks. The genus *Hister* Linnaeus contains about 240 nominal species worldwide. In Japan 6 species are recorded. As the genus *Hister* is the oldest erected of the family, many related genera have been separated from the *Hister*; for example, *Athlous* Thomson, 1859, *Macrohister* Lewis, 1904, *Margarinotus* Marseul, 1853, *Merohister* Reitter, 1909, and *Pachylister* Lewis, 1904. The genus, however, still contains a number of species, having no unique and clearly discriminating character states, that is, it is a large complex genus. Kryzhanovskij and Reichardt (1976) mentioned the necessity of separating the *Hister* complex into several subgroups. Olexa (1982) has recently discussed the systematics of the genus and its allied genera occurring in the Palearctic Region. He divided the genus into 2 subgroups based on the state of profemoral stria. But phylogenetic survey of the genus, as regards the world species, is not satisfactory and needs detailed reexaminations.

Key to the Japanese species of the genus *Hister*

- 1(2) Subhumeral stria absent. *H. impunctatus* Ôsawa, 1952
- 2(1) Subhumeral stria present.
- 3(6) Ventral surface of profemur with a nearly complete stria.
- 4(5) First and 2nd dorsal striae of elytra complete. *H. japonicus* Marseul, 1854
- 5(4) First – 3rd dorsal striae of elytra complete. *H. congener* Schmidt, 1885
- 6(3) Ventral surface of profemur with a stria shortly present on apical 1/3.
- 7(8) Pronotal anterior margin emarginate, the median portion of the emargination outwardly arcuate.
..... *H. simplicisternus* Lewis, 1879
- 8(7) Pronotal anterior margin emarginate, the median portion not outwardly arcuate.
- 9(10) Pygidium with fine punctures which are separated by their own diameter.
..... *H. unicolor leonhardi* Bickhardt, 1910
- 10(9) Pygidium densely with coarse punctures which are separated by 0.3 times their diameter to their
own diameter. *H. concolor* Lewis, 1884

Hister impunctatus Ôsawa, 1952

Hister (Hister) impunctatus Ôsawa, 1952: 6 [Japan: Myôken, Ôsaka, Honshû].

Hister impunctatus: Mazur, 1984: 190 [catalogued].

Japanese name: Tsuya-emma-mushi.

Specimens examined. No specimens of the species have been available for my study.

Distribution. Japan (Honshû).

Hister japonicus Marseul, 1854

(Figs. 66, 67, 70 and 71)

Hister japonicus Marseul, 1854: 201, t. 6, f. 22 [Japan]; Marseul, 1873: 220 [Nippon et Kiu-siu (= Kyûshû, Japan); commun dans le fumier].

Hister (Hister) japonicus: Bickhardt, 1918: 229 [China]; Desbordes, 1919: 387 [Japon; Chine; Indochine; Tonkin].

Japanese name: Yamato-emma-mushi.

Description. Male and female. Body length, PPL, male, 8.74 – 10.17 mm, female, 9.50 – 11.59 mm, PEL, male, 7.89 – 8.74 mm, female, 7.70 – 9.41 mm. Width, male, 6.65 – 7.51 mm, female, 6.56 – 8.17 mm. Biometric data are given in Table 11. Body oblong-oval, black and shining; tibiae, tarsi and antennae reddish brown.

Frontal stria of head (Fig. 66A) deeply impressed, carinate and usually complete, the anterior portion usually straight, but sometimes narrowly interrupted and feebly and inwardly arcuate at middle; surface even, sparsely and finely punctate. Labrum short, transverse oblong.

Pronotal sides (Fig. 66B) rather strongly convergent forward on basal nine-tenths. Apical angles round. Marginal pronotal stria complete laterally and broadly interrupted behind head. Outer lateral pronotal stria clearly impressed, carinate and its length variable, usually complete, sometimes abbreviated on basal 1/2. Inner lateral pronotal stria complete, the anterior portion regularly and coarsely crenate. Disk of pronotum sparsely covered with fine punctures which are separated by 10 times their diameter or more, and wholly covered with coriaceous ground sculptures; lateral 1/2 of narrow band along posterior margin coarsely punctate. Antescutellar area with a short longitudinal puncture.

Epipleural fossette of elytra feebly excavate and sparsely and coarsely punctate. Marginal epipleural stria lightly impressed on apical 1/2. Marginal elytral stria carinate and complete. Oblique humeral stria (Fig. 66B) lightly impressed on basal 1/2. External subhumeral stria absent. Internal subhumeral stria deeply impressed and present on apical 1/2. First and 2nd dorsal striae complete, well impressed, the basal 1/3 inwardly bent. Third dorsal stria present on basal 1/2, and its apical rudiment present on apical 1/8. Fourth and 5th dorsal striae usually short, occurring apically, sometimes wanting. Sutural stria absent. Disk of elytra wholly covered with coriaceous ground sculptures and sparsely and finely punctate.

Table 11. Biometric data for *Hister japonicus* Marseul.

	Male	Female
APW	2.66-2.95 (2.80±0.023) 20	2.57-3.33 (2.90±0.036) 20
PPW	6.08-6.84 (6.39±0.049) 20	5.89-7.41 (6.75±0.075) 20
PL	2.76-3.23 (2.99±0.030) 20	2.71-3.42 (3.14±0.036) 20
EL	4.09-4.75 (4.44±0.038) 20	4.09-5.23 (4.68±0.051) 20
EW	6.65-7.51 (7.03±0.053) 20	6.56-8.17 (7.52±0.081) 20
ProW	3.71-4.66 (4.19±0.048) 20	3.90-5.13 (4.55±0.064) 20
ProL	1.38-1.71 (1.53±0.022) 20	1.33-1.81 (1.65±0.030) 20
PyL	1.71-2.28 (1.94±0.033) 20	1.85-2.28 (2.07±0.025) 20
PTL	1.90-2.47 (2.19±0.027) 20	2.09-2.76 (2.29±0.035) 20
MSTL	1.90-2.28 (2.05±0.024) 20	2.00-2.38 (2.14±0.024) 20
MITL	2.38-2.95 (2.74±0.030) 20	2.57-3.04 (2.84±0.025) 20

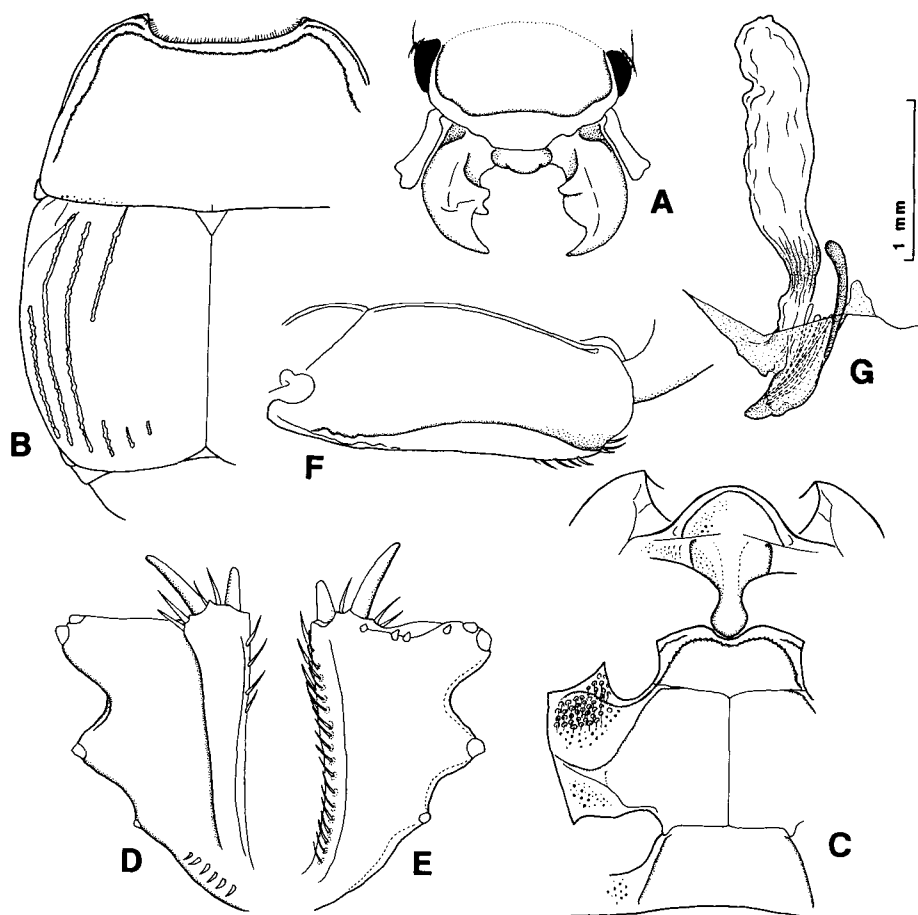


Fig. 66. *Hister japonicus* Marseul. A: Head, frontal view. B: Pronotum and left elytron, dorsal view. C: Pro-, meso-, metasterna and 1st abdominal sternum. D: Protibia, dorsal view. E: Ditto, ventral view. F: Profemur, ventral view. G: Female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

Propygidium with a slight depression on each side, and sparsely covered with coarse, round and rather deep punctures which are unevenly separated by 1 – 10 times their diameter; area between the coarse punctures sparsely scattered with fine punctures, and wholly covered with alutaceous ground sculptures. Punctuation of pygidium similar to that of propygidium, but much denser and coarser.

Anterior margin of prosternal lobe (Fig. 66C) regularly round; marginal stria deeply impressed, carinate and complete; another short stria present on lateral area between margin and the marginal stria; disk densely and coarsely punctate, the punctures becoming finer and sparser medially. Suture between prosternal keel and lobe

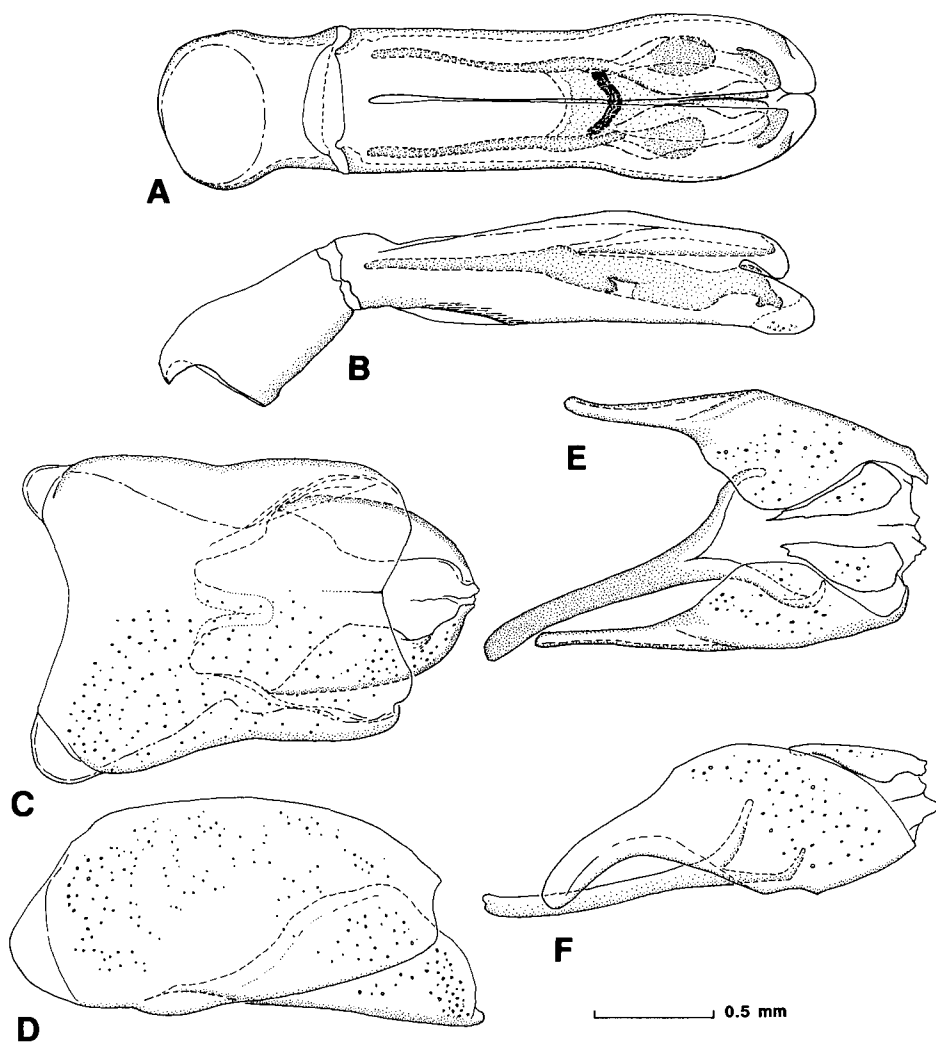


Fig. 67. *Hister japonicus* Marseul. Male genitalia. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

interrupted medially. Surface of prosternal keel even, impunctate, but lateral descending area on anterior 1/2 coarsely and densely punctate; carinal stria wanting; posterior margin of keel outwardly arcuate. Descending lateral stria deeply impressed and complete. Epipleura of prothorax densely furnished with long hairs.

Anterior margin of mesosternum deeply emarginate medially; marginal stria complete and deeply impressed; a short stria present behind antero-lateral angle on each side; disk wholly covered with coriaceous ground sculpture, and sparsely and finely punctate. Meso-metasternal suture lightly impressed and feebly angulate at middle. Post-mesocoxal stria of metasternum extended along posterior margin of mesocoxa, and becoming a little more distant from the margin outwards. Lateral metasternal stria deeply impressed, strongly carinate, obliquely and posteriorly extending, and united with an oblique stria which is strongly carinate and inwardly extends from the middle of metasterno-metepisternal suture. Intercostal disk of metasternum punctate like that of mesosternum. Lateral disk densely covered with large, round, shallow and setiferous punctures on basal 1/2, the hairs very long; the apical 1/2 of disk sparsely covered with moderate punctures which are separated by 5 times their diameter or more.

Intercostal disk of 1st abdominal sternum wholly covered with coriaceous ground sculptures, and sparsely clothed with microscopic punctures; lateral stria deeply impressed and complete on each side.

Protibia with 4 denticles on outer margin, the apical 2 appressed together on apical angle; 4 small denticles on apical margin of ventral surface. Profemoral stria nearly complete, usually shortened to basal 1/8, and broadest distant from posterior margin at middle to apical 1/3. Mesotibia with 3 rows of strong spines on outer margin; the median one composed of 14 spines; dorsal surface evenly with long hairs. Metatibia with 3 rows of strong spines. Meso- and metatibiae somewhat dilated.

Male genitalia as shown in Fig. 67.

Female genitalia as shown in Fig. 66G.

Specimens examined. [Honshû] Yamagata-ken: 1 ex., Tôgô-mura, Kita-maruyama-gun, 18/vi/1944, K. Shirahata (NA). Fukushima-ken: 2 exs., Yunohana, Tateiwa, Minami-Aizu, 16, 9/viii/1949, K. Nagayama (NA); 1♂ 1♀, Ditto, 10/vi/1950, T. Nakane (NA); 1 ex., Ditto, 8/vii/1948, Y. Kurosawa (NSMT); 2 exs., Numayama, Narahama, 6/vi/1948, Y. Kurosawa (NA); 1 ex., Ôyama, Monden, Wakamatsu, 11/v/1984, Y. Kurosawa (NA); 1 ex., Aizu-Wakamatsu, 9/vi/1951, Y. Kurosawa (NSMT); 1 ex., Fukiya-yama, Wakamatsu, 8/vi/1947, Y. Kurosawa (NA); 1 ex., Senaka-aburi, Higashi-yama, Kita-Aizu, 13/vi/1948, K. Ikarashi (NSMT). Ibaraki-ken: 1 ex., Yoshida, Higashi-Ibaraki, 19/v/1935, T. Tani (NSMT). Tochigi-ken: 3 exs., Kawaraya, Utsunomiya-shi, 23/vi/1981, K. Aida, collected from a dead crow (TPM). Chiba-ken: 1♂ 1♀, Ôami, 22/vi/1984, M. Ôhara; 1 ex., Mt. Kiyosumi, 24/v/1976, M. Tomokuni (NSMT); 1♀, Kashiwa, 21/v/1985, N. Kobaysahi. Tôkyô-to: 1♀, Tôkyô, no date and no collector's name (EIHU). Kanagawa-ken: 1 ex., Mt. Ôyama, 5/v/1975, H. Takizawa; 1 ex., Yamakita, 20/ix/1968, M. Ishida; 1♀, Matsuda-yama, Tanzawa, 14/ix/1972, M. Ishida; 1♂, Akuwa-chô, Yokohama, 27/v/1984, K. Wada; 1 ex., Yokono, Hadano City, 2/vi/1989, Y. Okushima. Niigata-ken: 1♂, Yoshigahira, northern Echigo, 25/vi/1954, K. Baba; 1♂, Sarusawa, northern Echigo, 26/ix/1985, K. Baba. Yamanashi-ken: 1 ex., Koike, 31/vi/1967, T. Kocha (EIHU); 1 ex., Masutomi, 12/vi/2603 (=1943), no collector's name (NSMT). Nagano-ken: 1 ex., Shimashima, 22/vii/1924, no collector's name. (NSMT); 1 ex., Fujimi-dai, 27/viii/1943, S. Ôsawa (NA); 1♀, Nojiri, 21/viii/1943, T. Nakane (NA); 1 ex., Fukushima, Kiso, 23/vii/1947, T. Nakane (NA); 1♂, 5 exs., Kami-Kôchi, Shinano, 21-8/vii/1947, S. Ôsawa. Shizuoka-ken: 1♀, Gotemba, 10/viii/1934, K. Nakamura (NA); 1♀, Kida, 6/vi/1951, K. Kojima (NA). Aichi-ken: 1♀, 3 exs., Higashi-yama, Nagoya, 10/ix/1946, vi/1948, S. Ôsawa (NA). Mie-ken: 1 ex., Yunoyama, Ise, 31/v/1948, S. Ôsawa (NA); 1♀, Ôsugi Valley, 5/vi/1952, T. Horio (NA). Shiga-ken: 1 ex., Hiei-zan, Ôtsu, 10/x/1989, T. Itô. Kyôto-fu: 3♂♂, 1 ex., Mizuho, Tozu River, 10/v/1986, S. Nomura (NA). Ôsaka-fu: 1♂ 1♀,

Iwawaki-san, southern Ôsaka, 2/vii/1980, T. Itô; 1♂ 1♀, 1 ex., Mino, 24/v/1936, K. Sakaguchi (NA); 1♂, Kongô-san, Chihaya-Akasaka, Kawachi, 11/vi/1988, T. Itô. Hyôgo-ken: 1 ex., Nose, 20/ix/1945, F. Takahashi (NA); 1♂, Nitani-bokujô, Taka, 16/ix/1984, T. Itô. Nara-ken: 1♂ 1♀, Nara, 3/viii/1946, S. Ôsawa (NA); 1 ex., Kasuga, 10/vi/1950, N. Y. (NA). Wakayama-ken: 1♂ 1♀, Shingû, southern Kii, 7/v, 11/vii/1946, S. Ôsawa (NA); 2 exs., Kushimoto, 24/v, 10/vi/1957, C. Morishima (NSMT); 1♀, Kawayu, 24/vii/1946, S. Ôsawa. Okayama-ken: 1♂, Gimba, 29/vii/1949, T. Okutani; 1 ex., Mimasaka, vi/1913, J. E. A. Lewis (BSM); 1♂, Yuge, Kumenan, 15/vii/1989, M. Hayashi. Oki Is.: 1♀, Saigô-chô, 13/x/1987, T. Kumata. Izu Isles.: 1 ex., near Yakeyama, Kôzu-shima Is., 13/v/1983, T. Niisato and M. Nishimura (NSMT).

[Kyûshû] Fukuoka-ken: 1 ex., Fukuchi-yama, 4/viii/1951, F. Takahashi (NA); 1 ex., Ditto, 31/v/1946, R. Matsuda (NSMT); 1 ex., Ditto, 31/v/1946, R. Matsuda (NA); 1 ex., Tashiro, 10/vi/1952, Y. Miyake (NA); 1 ex., Mt. Hiko-san, Buzen, 27/vii/1947, A. Yamaguchi (NA). Saga-ken: 1♂, Hokuzan-damu, 10/viii/1973, H. Makihara. Nagasaki-ken: 1 ex., Mt. Unzen, Alt. 2000 ft., 22/v/1928, J. E. A. Lewis (BSM). Kumamoto-ken: 1 ex., Touchi, Itsuki, 1/vii/1983, M. Maeda. Miyazaki-ken: 1 ex., Omata, 15/vii/1954, K. Nohara; 1♂, Mi-ike, 3/v/1983, S. Mizoguchi. Kagoshima-ken: 1 ex., Sata, 18/v/1980, M. Miura; 1♂ 1♀, Iriki-bokujô, 20/v/1984, M. Ôhara; 1 ex., Izashiki, Ôdomari, 21/v/1955, K. Sawada (NA); 1 ex., Imuta, 11/v/1984, T. and T. Nakane (NA); 1♀, Yae-yama, Kôriyama, 6/vii/1983, S. Sameshima; 1 ex., Kushikino, 24/v/1982, M. Ôhara. Tsushima Is.: 1♀, Sasuno, 30/v/1968, K. Suga (NA); 1♂, Hitakatsu, 7/ix/1964, T. Nakane (NA); 5 exs., Nita-Meboro, 9/vi/1968, Y. Kurosawa (NSMT); 1 ex., Ôboshi-yama, 13/vi/1968, Y. Kurosawa (NSMT); 5 exs., Meboro, 17/vii/1969, Y. Kurosawa (NSMT); 1 ex., Meboro, Mt. Mitake, 15-18/vii/1968, S. Miyamoto and A. Nakanishi (NSMT); 1♀, Aoumi, 24/vii/1989, F. Hirokawa.

Distribution (Fig. 71). Japan (Honshû, Shikoku, Kyûshû, Tsushima Is., Izu Isles, Oki Is.); Amurskij Kray; Korea; China; Viet-Nam.

Remarks. This species is allied to *Hister congener*, but separated from the latter by the striation of elytra, by having 2 spines on the apicalmost denticle of the protibia, and by having sparsely furnished hairs on the hypomeron of the pronotum.

Hister congener Schmidt, 1885

(Figs. 68, 69, 70 and 71)

Hister congener Schmidt, 1885a: 242 [Japonia]; Nakane, 1963: 70; Kryzhanovskij and Reichardt, 1976: 312; Mazur, 1984: 186 [catalogued]; Hisamatsu, 1985b: 226, pl. 41, f. 5 [noted, photo].

Hister (Pachylister) congener: Bickhardt, 1910a: 38 [catalogued].

Hister (Hister) congener: Bickhardt, 1917: 180 [catalogued]; Kamiya and Takagi, 1938: 30 [listed].

Pachylister congener: Lewis, 1904: 146.

Japanese name: Ibushi-emma-mushi.

Description. Male and female. Body length, PPL, 9.52 – 10.48 mm, PEL, 8.25 – 9.52 mm. Width, 6.83 – 7.94 mm. Biometric data are given in Table 12. Body large, oblong-oval, black and shining; tibiae, tarsi and antennae dark reddish brown.

Frontal stria of head (Fig. 68A) complete, well impressed, carinate and densely crenate, the anterior portion straight, sometimes narrowly interrupted at middle; disk of head even, sparsely clothed with fine punctures which are separated by 3 – 10 times their diameter, other microscopic punctures intermingled with fine ones. Labrum transversely oblong, the anterior margin feebly and outwardly angulate. Mandibles well developed.

Pronotal sides (Fig. 68B) nearly parallel on basal 1/2, and gradually and feebly convergent on apical 1/2, the apical ninth especially strongly convergent. Apical angles

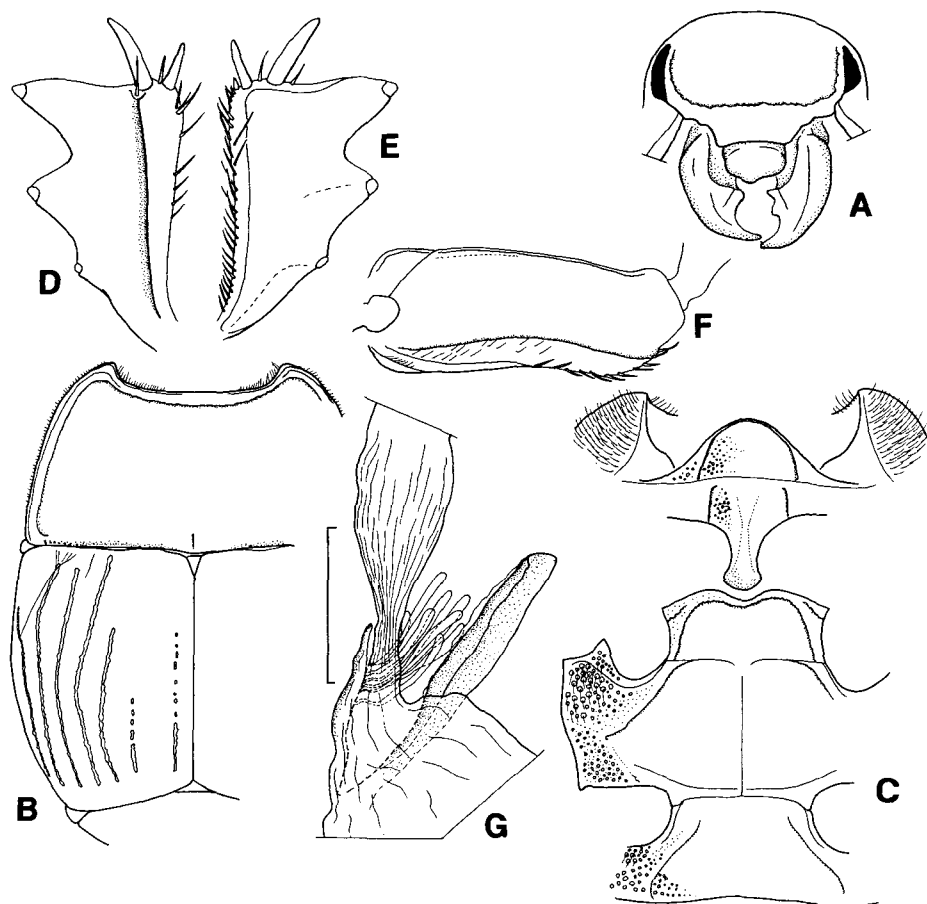


Fig. 68. *Hister congener* Schmidt. A: Head, frontal view. B: Pronotum and left elytron, dorsal view. C: Pro-, Meso-, metasterna and 1st abdominal sternum. D: Protibia, dorsal view. E: Ditto, ventral view. F: Profemur, ventral view. G: Female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

Table 12. Biometric data for *Hister congener* (Schmidt).

APW	3.10-3.57	(3.31±0.06)	6
PPW	6.35-7.30	(6.88±0.12)	6
PL	2.94-3.49	(3.32±0.08)	6
EL	4.44-5.08	(4.76±0.09)	6
EW	6.83-7.94	(7.45±0.15)	6
ProW	4.44-4.92	(4.60±0.07)	6
ProL	2.06-2.54	(2.28±0.06)	6
PyL	2.38-2.86	(2.63±0.06)	6
PTL	2.38-2.86	(2.63±0.06)	6
MSTL	2.22-2.70	(2.46±0.06)	6
MTTL	3.17-3.49	(3.41±0.05)	6

round. Margin of pronotum, except basal margin, densely covered with long hairs. Marginal pronotal stria complete laterally and broadly interrupted behind head. Outer lateral pronotal stria completely impressed laterally. Inner lateral stria complete and densely and coarsely crenate. Disk of pronotum sparsely clothed with fine punctures which are separated by 3 – 5 times their diameter, and microscopic punctures intermingled among the fine ones. Antescutellar area with a large longitudinal impression.

Epipleura of elytra feebly excavated. Marginal epipleural stria well impressed on apical $\frac{2}{3}$. Marginal elytral stria strongly carinate and complete. Subhumeral stria (Fig. 68B) stout and shallowly impressed on apical $\frac{2}{3}$. Oblique humeral stria lightly impressed on basal $\frac{1}{3}$. First – 3rd dorsal striae completely impressed and sparsely and coarsely crenate. Fourth dorsal stria present on apical $\frac{1}{2}$ or more, the basal portion usually represented by coarse punctures. Fifth dorsal stria present on apical $\frac{1}{3}$. Sutural stria variable, usually present on apical $\frac{1}{3}$, sometimes on apical $\frac{1}{2}$, or absent. Disk of

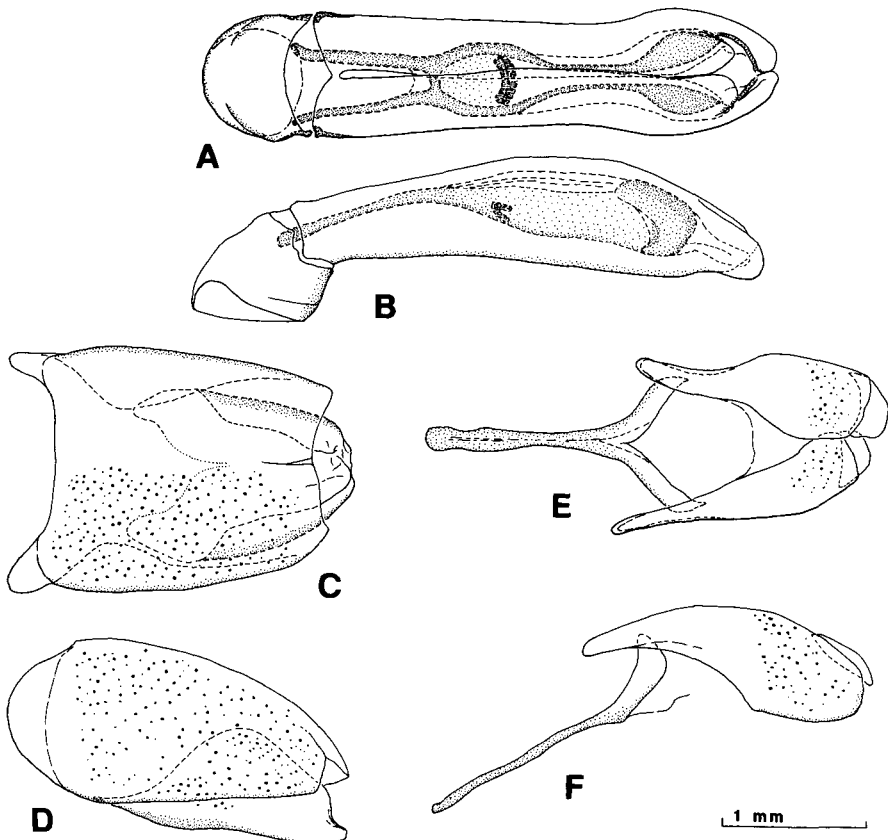


Fig. 69. *Hister congener* Schmidt. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

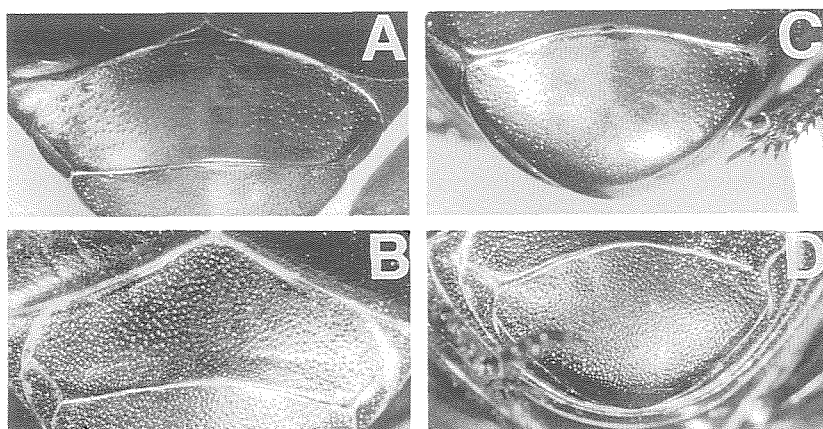


Fig. 70. Propygidia (A, C) and pygidia (B, D). A, C: *Hister japonicus* Marseul. B, D: *Hister congener* Schmidt.

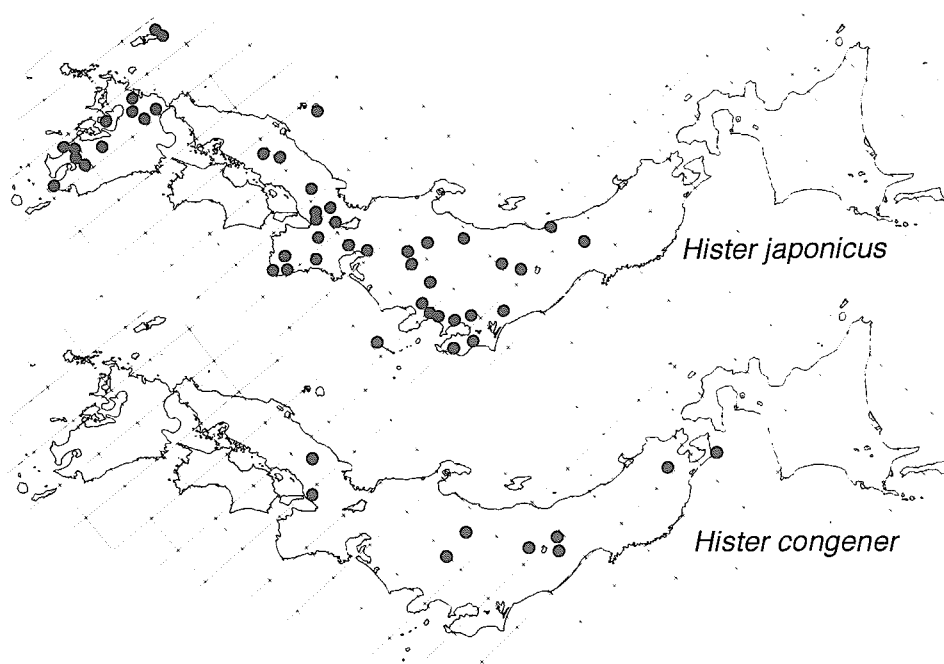


Fig. 71. Collection sites of *Hister japonicus* Marseul and *Hister congener* Schmidt in Japan

elytra evenly covered with fine punctures which are separated by about 4 times their diameter.

Propygidium (Fig. 70B) densely covered with large, round and shallow punctures which are separated by their own diameter; interspace between the large punctures covered with moderate-sized punctures which are separated by about 1.5 (1 –

2) times the diameter; these punctures becoming finer around margin; disk wholly clothed with alutaceous ground sculptures. Punctuation of pygidium (Fig. 70D) similar to that of propygidium but much denser; the punctures becoming minute at apex.

Anterior margin of prosternal lobe (Fig. 68C) narrowly truncate apically, its marginal stria complete and carinate; disk of lobe densely and coarsely punctate, the punctures becoming finer and sparser medially. Prosternal keel without carinal stria, its disk even on basal 1/2; the disk sparsely and finely punctate; lateral descending area on apical 1/2 densely covered with coarse punctures. Lateral descending stria of keel complete and carinate.

Anterior margin of mesosternum (Fig. 68C) narrowly and strongly emarginate medially; marginal stria complete, sparsely and coarsely crenate; another short stria present behind each antero-lateral angle; disk sparsely clothed with microscopic punctures except on the area outside the marginal stria, the area being coarsely and densely punctate. Meso-metasternal suture lightly but distinctly impressed and strongly angulate at middle. Post-mesocoxal stria of metasternum impressed along posterior margin of mesocoxa and becoming more distant from the margin laterally. Lateral metasternal stria well impressed and extending posteriorly and obliquely, the apical end attaining near apical 1/3 of metasternal disk. Intercoxal disk of metasternum similar to that of mesosternum. Lateral disk densely covered with coarse, shallow and setiferous punctures, and transversely elevated at middle.

Intercoxal disk of 1st abdominal sternum (Fig. 68C) sparsely covered with fine punctures which are separated by 2 – 5 times their diameter; the lateral stria well impressed, carinate and shortly abbreviated basally.

Protibia (Fig. 68D, E) with 3 denticles on outer margin, the apical one very large. Meso- and metatibiae with 2 rows each consisting of about 18 spines which are stout and long. Profemoral stria nearly complete, shortened on basal 1/8.

Male genitalia as shown in Fig. 69.

Female genitalia as shown in Fig. 68G.

Specimens examined. [Honshû] Aomori-ken: 1 ex., Shiriya, 5/viii/1958, A. Abe (NA). Yamagata-ken: 1 ex., Yonezawa, 16/v/1944, Y. Kurosawa (NSMT); 1♂, Ditto, 17/v/1910, S. Matsumura (EIHU). Fukushima-ken: 1 ex., Tokusa, Tateiwa, 26/v/1991, K. Haga; 1♂, Yunohana, Tateiwa, Minami-Aizu, 15/v/1948, W. Hoshi; 1 ex., Ditto, 1/v/1948 (NSMT); 1 ex., Odayama, Monden, Kita-Aizu, 26/vi/1946, Y. Ikarashi (NSMT); 1 ex., Akai, Kinato, Kita-Aizu, 7/vi/1948, Y. Kurosawa (NA). Nagano-ken: 1♂, Hokushin-bokujô, Sugadaira, 10/viii/1963, S. Kondo; 1♂, Uminokuchi-bokujô, Yatsugatake, 18/v/1969, M. Kiuchi; 1♀, Kuzukawa-Heraka, 4/v/1954, A. Abe(NA). Hyôgo-ken: 1 ex., Mt. Rokkô, Kôbe, vii/1928, E. R. Dickover (BSM); 1 ex., Ditto, 16/vi/1929, E. R. Dickover (BSM); 1 ex., Ditto, 6/vii/1928, F. C. Hadden (BSM); 1 ex., Kôbe, 6/vii/1930, E. R. Dickover (F. C. Hadden collection), *Hister congener* Schmidt, H. Desbordes det., 1932 (BSM). Tottori-ken: 1 ex., Hyônoson, 12/vi/1961, K. Tsuji (NSMT).

[Korea] 1 ex., Mt. Kongô, 28/vii/1924, K. Satô (NSMT).

Distribution (Fig. 71). Japan (Honshû); Primorskij Kray; Korea; Taiwan; northern China.

Remarks. Lewis (1904) treated this species as a member of the genus *Pachylister* on the basis of the following states interpreted by him as generic; protibiae with 3 large denticles on outer margin, and anterior margin of labrum outwardly projecting. But since Bickhardt (1917) this species has been treated as a member of *Hister*, because the anterior margin of the labrum of this species is very slightly projecting. These generic characteristics are unclear and problematical. This species is allied to *Hister japonicus* (see *H. japonicus*).

Hister simplicisternus Lewis, 1879
(Figs. 72, 73, 75, 76)

Hister simplicisternus Lewis, 1879: 461 [Japan: Higo, where it is common]; Olexa, 1982b: 198 [key, figures]; Mazur, 1984: 197 [catalogued]; Hisamatsu, 1985b: 227, pl. 41, no. 8 [noted, photo].
Hister simplicisternis (sic): Kryzhanovskij and Reichardt, 1976: 313 [description, figures].
Hister (Hister) simplicisternus: Bickhardt, 1910a: 49 [catalogued]; Bickhardt, 1917: 186 [catalogued].
Hister togotii Lewis, 1914b: 286 [Tsushima Is.], synonymized by Bickhardt, 1920: 30.
Hister togotii (sic): Bickhardt, 1917: 187 [catalogued]; Bickhardt, 1920a: 30.

Japanese name: Hime-tsuya-emma-mushi.

Description. Male and female. Body length, PPL, male, 4.09 – 5.57 mm, female, 4.62 – 6.14 mm, PEL, male, 3.43 – 4.43 mm, female, 3.86 – 4.95 mm. Width, male, 3.05 – 4.00 mm, female, 3.33 – 4.17 mm. Biometric data are given in Table 13. Body oval, rather convex, black and shining; tibiae, tarsi and antennae rufopiceous.

Frontal stria of head (Fig. 72A) deeply impressed and carinate, the anterior portion broadly straight. Disk of head feebly depressed inside the stria which is sparsely clothed with moderate punctures separated by about 3 times their diameter.

Pronotal sides (Fig. 72B) arcuate and strongly convergent forward. Apical angle round. Anterior margin of pronotum broadly emarginate, the median portion of emargination feebly arcuate outwardly. Marginal pronotal stria complete laterally and broadly interrupted behind head. Outer lateral pronotal stria abbreviated on basal 1/3; feebly and sparsely crenate. Inner lateral pronotal stria abbreviated on basal 1/6, and densely and strongly crenate. Disk of pronotum sparsely clothed with fine punctures which are separated by 4 – 10 times their diameter; a narrow band along posterior margin covered with large and round punctures.

Epipleuron of elytron (Fig. 72B) broad and even, and with 3 striae; the outermost stria clearly impressed on apical 1/2; median one (epipleural marginal stria) nearly complete and carinate, but shortly reduced basally; inner one (marginal elytral stria) complete and strongly carinate. Lateral margin of elytron strongly carinate. External subhumeral stria shortly present medially as an arc, and deeply impressed. Oblique humeral stria lightly impressed on basal 1/3. First – 3rd dorsal striae complete, deeply impressed and sparsely and coarsely carinate. Fourth dorsal stria present on apical 1/4, with a short rudiment basally. Fifth dorsal stria present on apical 1/8 but indistinct. Sutural stria present on apical 1/2. Disk sparsely clothed with fine punctures which are separated by about 10 times their diameter.

Propygidium (Fig. 75A) unevenly and sparsely covered with large, round and deep punctures which are separated by 0.5 – 2 times their diameter; surface between large punctures sparsely and finely punctate; area between these punctures with alutaceous ground sculptures. Punctuation of pygidium (Fig. 75E) similar to, but much finer than, that of propygidium, and the punctures becoming finer apically.

Anterior margin of pronotal lobe (Fig. 72C) round, its marginal stria deeply impressed, complete and carinate; disk densely and coarsely punctate, the punctures separated by about their own diameter and becoming sparser basally. Prosternal keel rather broad, even, without carinal striae; disk coarsely punctate on basal 1/2, the punctures separated by about 1.5 (1 – 2) times their diameter; basal margin of keel nearly straight. Descending lateral stria deeply impressed, carinate and complete.

Table 13. Biometric data for *Hister simplicisternus* Lewis.

	Male	Female
APW	1.07-1.43 (1.24±0.08) 20	1.00-1.43 (1.28±0.02) 20
PPW	2.57-3.52 (3.09±0.05) 20	2.95-3.71 (3.37±0.05) 20
PL	1.29-1.76 (1.56±0.03) 20	1.52-1.95 (1.70±0.02) 20
EL	1.81-2.38 (2.14±0.03) 20	2.05-2.67 (2.36±0.04) 20
EW	3.05-4.00 (3.56±0.06) 20	3.33-4.17 (3.84±0.06) 20
ProW	1.81-2.48 (2.14±0.04) 20	2.09-2.71 (2.39±0.04) 20
ProL	0.71-1.05 (0.89±0.04) 20	0.71-1.05 (0.95±0.02) 20
PyL	0.90-1.29 (1.13±0.02) 20	1.05-1.38 (1.23±0.02) 20
PTL	0.90-1.24 (1.09±0.02) 20	1.05-1.43 (1.19±0.02) 20
MSTL	0.90-1.24 (1.12±0.02) 20	1.09-1.38 (1.24±0.02) 20
MITL	1.24-1.71 (1.48±0.03) 20	1.38-1.71 (1.57±0.05) 20

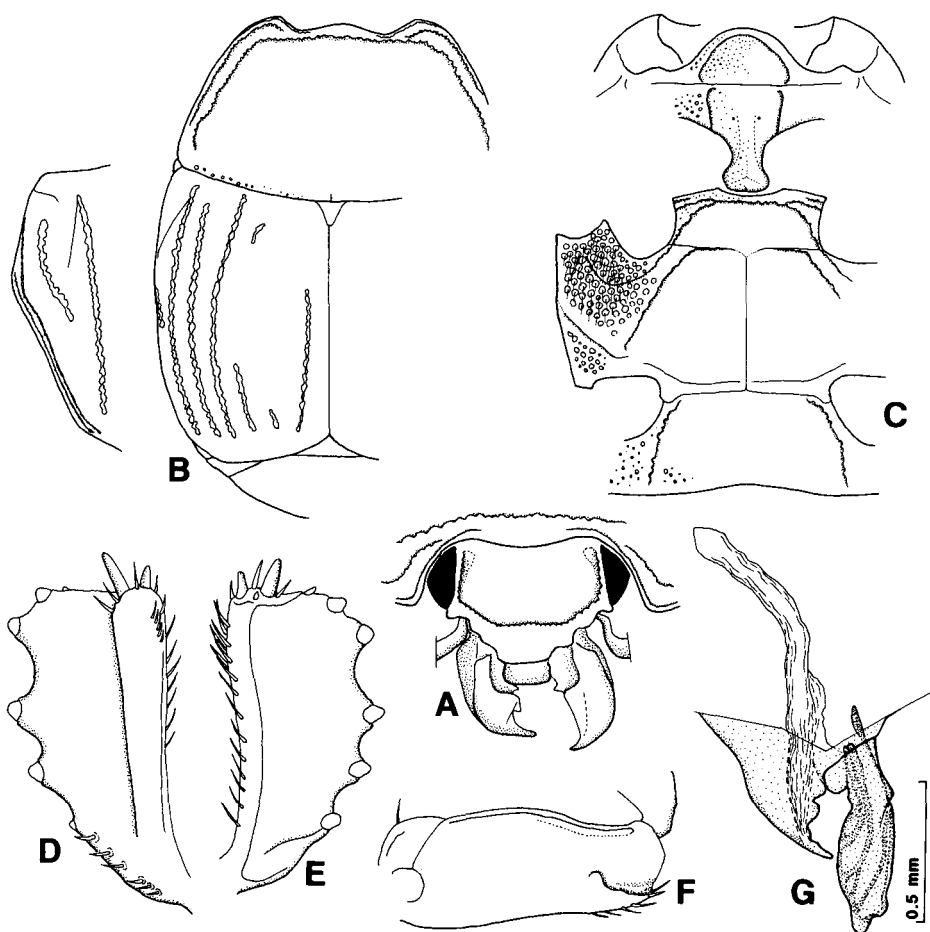


Fig. 72. *Hister simplicisternus* Lewis. A: Head, frontal view. B: Pronotum and left elytron, dorsal view. C: Pro-, meso-, metasterna and 1st abdominal sternum. D: Protibia, dorsal view. E: Ditto, ventral view. F: Profemur, ventral view. G: Female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

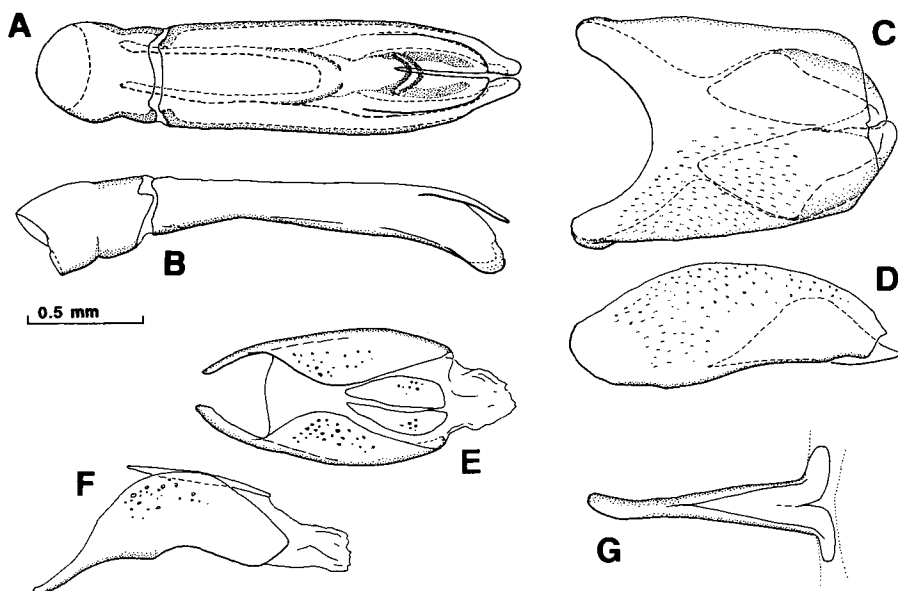


Fig. 73. *Hister simplicisternus* Lewis. Male genitalia. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: 9th sternum (spicule), ventral view.

Anterior margin of mesosternum (Fig. 72C) nearly straight, feebly emarginate medially; marginal stria deeply impressed, strongly carinate, sparsely and coarsely carinate, and complete; 2 short striae present behind the anterolateral angle on each side, the posterior stria united with the marginal stria; disk sparsely and finely punctate, the punctures separated by 10 times their diameter; another microscopic punctures intermingled with them. Meso-metasternal suture distinctly impressed, and angulate at middle. Post-mesocoxal stria of metasternum deeply impressed and carinate, and becoming more distant from posterior margin of mesocoxa on lateral side; the outer end of stria attaining near the middle of metasternal-mesepimeral suture. Lateral metasternal stria extending obliquely and posteriorly, beginning from lateral 1/4 of meso-metasternal suture, deeply impressed and carinate, and not united with oblique stria which is strongly carinate and inwardly extends from the middle of metasternal-metepisternal suture. Intercoxal disk of metasternum sparsely and finely punctate, the punctures separated by about 8 times their diameter. Lateral disk densely covered with large, round, shallow and setiferous punctures, the punctures becoming finer apically; hairs of the punctures long.

Intercoxal disk of 1st abdominal sternum (Fig. 72C) sparsely and finely punctate, the punctures coarser before apical angles; lateral stria complete, densely and coarsely crenate.

Protibia with 5 denticles on outer margin. Profemur with femoral stria shortly present on apical 1/4.

Profemur with femoral stria shortly present on apical 1/4.

Male genitalia as shown in Fig. 73.

Female genitalia as shown in Fig. 72G.

Specimens examined. [Honshû] Aomori-ken: 2 exs., Higashi-dôri, Shiriya-zaki, 6/vi, 26/vii/1987, H. Saitô; 2 exs., Shiriya, 5/viii/1958, A. Abe (NA). Iwate-ken: 4 exs., Kuriya-gawa, 20/v/1974, H. Hayakawa (NA). Miyagi-ken: 1 ex., Mt. Saho, Sendai, 2/vi/1951, K. Nagayama (NA). Yamagata-ken: 1 ex., Sakata, 1/vii/1948, T. Nakane (NA). Fukushima-ken: 1 ex., Wakamatsu, 29/vi/1948, T. Nakane (NA); 3 exs., Ditto, 21/v/1949, Y. Kurosawa (NSMT); 1 ex., Hinoemata, Aizu, 1/viii/1947, K. Nagayama (NA); 1 ex., Nagurazaka, Asahi-dake, Minami-Aizu, 1/viii/1949, K. Nagayama (NSMT); 1 ex., Aizu-Wakamatsu, 14/vi/1950, Y. Kurosawa (NSMT); 1 ex., Yunohana, Tateiwa, Minami-Aizu, 10/vii/1948, Y. Kurosawa (NSMT); 3 exs., Ôyama, Monden, Kita-Aizu, 21/v/1949, Y. Kurosawa (NSMT); 1 ex., Tsuchiyu, no date, S. Ômomo. Ibaraki-ken: 1 ex., Yatabe, 5/vii/1986, M. Kiuchi. Tochigi-ken: 3 exs., Kawaraya-machi, Utsunomiya-shi, 26/vi, 3/vii/1981, K. Aida, collected from a dead crow (TPM); 1 ex., Chikushi-yama, Karasuyama-machi, 22/vi/1987, K. Satoh (TPM). Chiba-ken: 1♂1♀, 1 ex., Ôami, 19, 22/vi/1984, M. Ôhara; 1♂, Abiko, Tone-gawa, 5/v/1973, M. and K. Ishida; 1 ex., Narita, 9/vi/1914, E. Gallois (EIHU). Tôkyô-to: 8 exs., Tôkyô, 29, 30, 31/v, 3/vi/1914, E. Gallois (EIHU); 1 ex., Komaba, Tôkyô, 24/v/1914, S. Hirayama (EIHU); 1 ex., Tôkyô, no date, S. Matsumura (EIHU); 1 ex., Kinuta, Setagaya, 15/v/1988, Y. Kurosawa (NSMT); 1 ex., Rokugien, 9/v/1953, Y. A. (NSMT); 1♂, 1 ex., Ogikubo, 5/vii, 30/viii/1966, M. Ishida; 1 ex., Aoyama, 27/v/1946, T. Nakane (NA); 1 ex., Kawajiri, 23/vi/1940, T. Okada (NA); 2♀♀, 3 exs., Toshima-ku, 19/v/1963, S. Kondo; 2♀♀, Fuchû, 11/vi/1968, M. Ishida; 3 exs., Sayama, 11/v/1957, M. Suwa. Kanagawa-ken: 3♂♂, 2 exs., Akuwa-chô, Yokohama, 7/vi/1983, 25, 27/v, 12, 15/vi/1984, K. Wada; 1♂1♀, Fuchinobe, Sagami-hara, 7/v/1973, M. Ishida; 1♂1♀, Daiyû-zan, 29/v/1982, M. Nishikawa. Niigata-ken: 1 ex., Maki, Matsumura, northern Echigo, 7/vii/1987, K. Baba. Toyama-ken: 1 ex., Tateyama-machi, 21/vii/1954, S. Takagi (EIHU). Yamanashi-ken: 1 ex., Nirasaki, 18/v/1986, N. Kobayashi. Nagano-ken: 1♀, Koma-ga-take, Kiso, 4-5/viii/1946, S. Ôsawa (NA); 1♂, Nojiri, Tôyô-eiwa, 21/vii/1941, T. Nakane (NA); 1 ex., Fujimi, 20/vii/1956, S. Nomura (NSMT); 1 ex., Sanjirô, Utsugushi-ga-hara, 5/viii/1951, S. Uéno (NA). Gifu-ken: 2♀♀, Ôgaki, Mino, 10/v/1946, Y. Moriya (NA). Shizuoka-ken: 1 ex., Kida, 6/vi/1951, K. Kojima (NA); 1♀, Asagiri-Kôgen, Fuji, 800 m, 23/viii/1972, M. Ishida; 1 ex., Yawatano, Itô, 15/vi/1977, M. Ishida. Aichi-ken: 4♂♂1♀, 4 exs., Higashi-yama, Nagoya, 23, 27/vi/1948, S. Ôsawa (NA); 1♂2♀♀, 2 exs., Shikatsu-mura, Owari, 19/viii/1945, 27/vi, 16/viii/1946, S. Ôsawa (NA); 1♂1♀, Nagoya, 10/v, 4/viii/1947, S. Ôsawa (NA). Mie-ken: 1 ex., Osugi, 12/vi/1952, T. Horino (NA); 1 ex., Osugi-dani, Ise, 10/vi/1952, Takeuchi (NA). Kyôto-fu: 1 ex., Kyôto, 1956, T. Nakane (NA). Ôsaka-fu: 1 ex., Myôken, 22/vi/1952, F. Takahashi (NA); 1♀, Iwakaki-san, southern Ôsaka, 2/vii/1988, T. Itô. Wakayama-ken: 1♀, Shingû, Kii, v/1946, S. Ôsawa (NA); 1♂, Nachi, Kii, 16/vii/1946, S. Ôsawa (NA). Hyôgo-ken: 1 ex., Motoyama-mura, Kôbe, 14/v/1938, K. Sakaguchi (NA); 1 ex., Kôbe, 30/vii/1916, J. E. A. Lewis (BSM); 1 ex., Harada, Kôbe, 15/viii/1915, no collector's name (BSM); 1 ex., Ditto, 20/vi/1912, J. E. A. Lewis (BSM); 1♀, Mitani-bokujô, Taka, 16/ix/1984, T. Itô.

[Kyûshû] Fukuoka-ken: 1 ex., Fukuchi-yama, 4/viii/1951, F. Takahashi (NA). Kumamoto-ken: 1♀, Komezuka, Aso, 7/vi/1981, M. Ôhara; 1♂1♀, Mt. Maru, Takamori, Aso, 6/vi/1986, E. Matsui; 1♂, Nabeno-daira, Aso, 5/vi/1986, E. Matsui. Ôita-ken: 1♀, Kujû, 6/v/1981, K. Sakai. Kagoshima-ken: 1♀, Kurino, Kirishima, 25/vi/1983, K. Sugawara; 1♀, Ditto, 1/vi/1981, M. Ôhara; 1♂, Ditto, 3/ix/1990, M. Ôhara; 1♂, Iriki, 20/v/1984, M. Ôhara.

Distribution (Fig. 76). Japan (Honshû, Shikoku, Kyûshû); Korea.

Remarks. This species is easily distinguished from all the other Japanese species of the tribe Histerini by the deeply impressed external subhumeral stria and by the feeble and outward projection on the anterior margin of pronotum.

Hister unicolor leonhardi Bickhardt, 1910
(Figs. 75)

Hister leonhardi Bickhardt, 1910b: 180 [East Siberia].

Hister unicolor ab. *leonhardi*: Reichardt, 1938: 236.

Hister unicolor opimus Reichardt in Kryzhanovskij and Reichardt, 1976: 316 [USSR: Zabaikal'e and Primorskij; Japan: Unzen], synonymized by Mazur, 1984: 199.

Hister unicolor leonhardi: Mazur, 1984: 199.

Japanese name: Nise-kuro-emma-mushi.

Distribution. Japan (Kyûshû: Shimabara); East Siberia; Primorskij Kray; Mongolia; Korea; North-eastern China.

Hister concolor Lewis, 1884

(Figs. 74, 75, 76)

Hister concolor Lewis, 1884: 135 [Japan: Ishikari river, Hokkaidô].

Hister (Hister) concolor: Bickhardt, 1910a: 42 [Japan]; Bickhardt, 1917: 197; Kamiya and Takagi, 1938: 30; Ôsawa, 1952: 6.

Hister concolor: Kryzhanovskij and Reichardt, 1976: 316; Hisamatsu and Kusui, 1984: 16 [noted]; Hisamatsu, 1985b: 227, pl. 41, f. 7 [noted, photo]; Ôhara and Li, 1988: 96 [China: Liaoning].

Japanese name: Kuro-emma-mushi.

Description. Male and female. Body length, PPL, male, 6.31 – 8.00 mm, female, 6.44 – 8.69 mm, PEL, male, 5.83 – 7.00 mm, female, 5.63 – 7.50 mm. Width, male, 4.94 – 6.19 mm, female, 5.00 – 6.63 mm. Biometric data are given in Table 14. Body oval and black; spines of tibiae, tarsi, antennae and mouthparts except mandibles reddish brown.

Frontal stria of head (Fig. 74A) carinate and usually interrupted at middle, sometimes complete, the anterior portion feebly and inwardly arcuate and densely and coarsely crenate; disk evenly and finely punctate, the punctures separated by 3 – 4 times their diameter, and interspace between the fine punctures sparsely and microscopically punctate. Labrum transversely oblong.

Pronotal sides (Fig. 75B) regularly arcuate, strongly convergent forward on apical 2/3 and convergent posteriorly on basal 1/3. Apical angles angulate. Marginal pronotal stria clearly impressed and complete laterally, and broadly interrupted behind head. Outer lateral pronotal stria deeply impressed, crenate and abbreviated on basal 1/3 – 1/2. Inner lateral stria deeply impressed, abbreviated on basal 1/3, and the anterior portion complete and densely and coarsely crenate. Disk of pronotum sparsely clothed with microscopic punctures which are separated by 5 times their diameter or more, and wholly covered with light coriaceous ground sculptures; lateral 1/3 of a narrow band along the posterior margin coarsely and densely punctate. Antescutellar area with a short longitudinal puncture.

Epipleural fossette of elytra feebly excavated. Marginal epipleural stria slightly carinate and present on apical 1/2. Marginal elytral stria deeply impressed, carinate and complete. External subhumeral stria (Fig. 74B) present on medio-apical 1/4 in an arc, and broadly and shallowly impressed and crenate. Internal subhumeral stria broadly and shallowly impressed on apical 1/2, and densely and coarsely crenate. Oblique humeral stria lightly impressed on basal 1/2. First – 3rd dorsal striae complete, broadly and shallowly impressed and densely crenate. Fourth dorsal stria usually present on apical 1/2, sometimes on apical 2/3. Fifth dorsal stria variable in length, usually present on apical 1/4, sometimes on apical 1/3 or 1/5. Sutural stria variable, usually present

Table 14. Biometric data for *Hister concolor* Lewis.

	Male	Female
APW	1.69-2.06 (1.88±0.10) 20	1.69-2.19 (2.00±0.03) 20
PPW	4.25-5.38 (4.77±0.08) 20	4.19-5.69 (5.18±0.09) 20
PL	1.75-2.50 (2.17±0.04) 20	1.81-2.63 (2.33±0.05) 20
EL	3.06-3.88 (3.44±0.06) 20	3.06-4.13 (3.72±0.07) 20
EW	4.94-6.19 (5.60±0.09) 20	5.00-6.63 (6.10±0.10) 20
ProW	2.94-3.75 (3.33±0.05) 20	2.94-4.13 (3.70±0.08) 20
ProL	1.06-1.44 (1.25±0.02) 20	1.19-1.63 (1.40±0.03) 20
PyL	1.50-1.88 (1.64±0.03) 20	1.38-2.06 (1.85±0.04) 20
PTL	1.31-1.81 (1.56±0.03) 20	1.44-1.88 (1.69±0.03) 20
MSTL	1.31-1.88 (1.63±0.03) 20	1.31-2.00 (1.76±0.04) 20
MTTL	1.69-2.50 (2.08±0.04) 20	1.88-2.63 (2.31±0.05) 20

apically, a little longer than 5th. Disk of elytron wholly covered with coriaceous ground sculptures and sparsely clothed with fine punctures which are separated by 5 – 10 times their diameter, the punctures becoming coarser on apical 1/6.

Propygidium (Fig. 75D) densely covered with large, round and shallow punctures, which are separated by 0.75 (0.5 – 1) times the diameter and becoming finer around margin; interspace between the large punctures intermingled with moderate-sized punctures which are as large as those of apical 1/6 of elytron; surface, except for punctures, wholly covered with alutaceous ground sculptures. Punctuation of pygidium (Fig. 75H) similar to that of propygidium, but much denser than the latter, the punctures separated by 0.3 – 0.5 times their diameter.

Anterior margin of prosternal lobe (Fig. 74C) round; marginal stria broadly interrupted at middle; disk sparsely and coarsely punctate, the punctures separated by about 4 times their diameter and becoming finer medially. Prosternal keel even and somewhat broad, and without carinal stria; the posterior margin arcuate outwards; disk evenly covered with fine punctures which are separated by about 3 times their diameter on median area; lateral descending area with coarse and dense punctures. Descending lateral stria strongly carinate and complete.

Anterior margin of mesosternum (Fig. 74C) strongly emarginate at middle; marginal stria complete and carinate; a short and broad stria present behind each antero-lateral angle; disk sparsely and finely punctate, the punctures separated by about 3 – 5 times their diameter and becoming coarser laterally. Meso-metasternal suture clearly impressed and angulate at middle. Post-mesocoxal stria of metasternum extending along posterior margin of mesocoxa, and becoming a little more distant from the margin, the outer end attaining at middle of metasternal-mesepimeral suture. Lateral metasternal stria deeply impressed, strongly carinate, obliquely extending posteriorly, and united with oblique stria, which is strongly carinate and inwardly extends from the middle of metasternal-metepisternal suture. Punctuation of intercoxal disk similar to that of mesosternum, the punctures becoming somewhat coarser laterally. Lateral disk densely covered with large, deep and round punctures which are separated by 0.3 – 0.5 times their diameter; interspace between large punctures usually coarsely punctate; these punctures becoming finer inwardly.

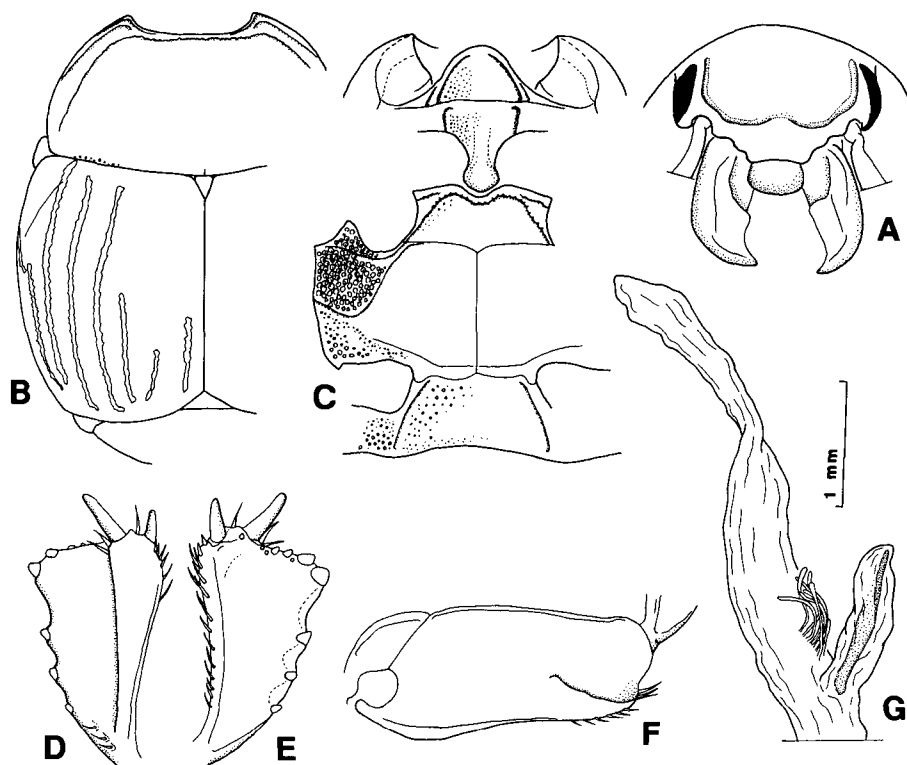


Fig. 74. *Hister concolor* Lewis. A: Head, frontal view. B: Pronotum and left elytron, dorsal view. C: Pro-, meso-, metasterna and 1st abdominal sternum. D: Protibia, dorsal view. E: Ditto, ventral view. F: Profemur, ventral view. G: Female genitalia, spermatheca and bursa copulatrix, lateral view (left side).

Intercoxal disk of 1st abdominal sternum evenly covered with moderate-sized punctures which are separated by about 3 times their diameter, the punctures becoming coarser laterally; lateral stria deeply impressed, carinate and complete.

Protibia (Fig. 74D, E) with 3 or 4 denticles on outer margin, and with 3 or 4 on apical margin. Meso- and metatibiae with 2 rows each consisting of 6 – 8 stout spines. Profemoral stria (Fig. 74F) present on apical $1/3 - 1/2$.

Male genitalia as Fig. 76.

Female genitalia as Fig. 74G.

Specimens examined. [Hokkaidô] 4 exs., Hamayûchi, Wakkanai, 23/viii/1993, S. Hori (HOR); 1 ex., Sakanoshita, Wakkanai, 10/viii/1974, Y. Kusui; 1 ex., Horonobe, 30/vii/1988, Y. Ishihama; 7 exs., Futatsu-yama, Shibeche, Kushiro, 20/ix/1955, 15/x/1970, 26/ix/1974, 24/vi/1979, 15/viii/1981, K. Ijima (IJ); 1 ex., Ikutahara, near Abashiri, 7/vii/1987, M. Ôhara; 1 ex., Kenebetsu, Nemuro, 21/vii/1973, M. Nishimura; 1 ex., Gensei-kaen, Abashiri, 19/vii/1986, M. Ôhara; 1 ex., Naka-Tombetsu-chô, Kami-Tombetsu, 27/vii/1987, K. Haga; 2 exs., Kawakami, Rikubetsu, 31/vii/1988, K. Haga; 5 exs., Onne-shisui-damu, Minami-Kitoushi, Ashoro, 9/vii/1991, K. Haga; 1 ex., Satsunai, 8/viii/1968, H. Torikura; 2♂♂ 4♀♀, 1 ex., Hitsuji-ga-oka, Sapporo, 20/vii/1985, M. Ôhara; 1♂, Moiwa, Sapporo, 4/vi/1953, T. Kumata (EIHU); 1♀, 1 ex., Sapporo, 9/vi/1975, M. Kiuchi; 2♀♀, 1 ex., Ditto, 19/v, 7/vi/1952, K. Honma (EIHU); 7 exs., Nopporo, 5, 12/vi, 1/viii/1987, M. Ôhara; 1

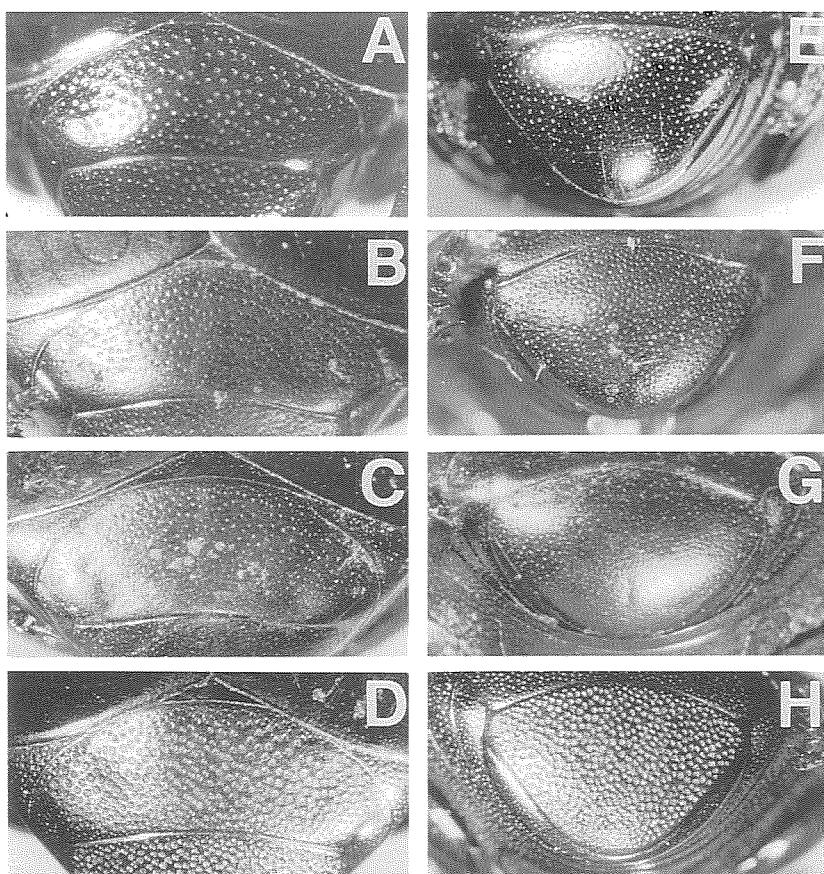


Fig. 75. Propygidia (A, B, C, D) and pygidia (E, F, G, H). A, E: *H. simplicisternus* Lewis. B, F: *H. unicolor leonhardi* Bickhardt. C, G: *H. u. unicolor* Linnaeus. D, H: *H. concolor* Lewis.

ex., Ishikari, 7/viii/1978, T. Fujisawa (EIHU); 1 ex., Asari, Otaru, 18/vi/1978, T. Fujisawa (EIHU); 1 ♀, 1 ex., Rokushinai, Shakotan, 22, 23/ix/1985, M. Mori; 1 ♂, 1 ex., Ootobe, 15, 22/ix/1985, M. Mori; 1 ♀, 2 exs., Ditto, 2/viii/1973, T. Kumata (EIHU); 1 ex., Tomakomai, 8/vi/1986, M. Mori; 2 ♂♂ 3 ♀♀, Bibi, 8/vi/1986, M. Mori; 3 exs., Iwanai, 9-10/vii/1990, M. Ôhara; 1 ex., Toyohama, Shimamaki, 8/vii/1988, M. Ôhara, M. Satô et N. Ishihama; 3 exs., Kuromatsunai, 6, 25/vi/1986, M. Mori; 2 exs., Ditto, 8/viii/1988, M. Ôhara; 1 ex., Kita-Hiyama, 28/v/1988, M. Ôhara. Rishiri Is.: 1 ♂ 2 ♀♀, Oshidomari, 4/vii/1974, Y. Kusui.

[Honshû] Aomori-ken: 1 ex., Shiriya, 5/viii/1958, A. Abe (NA); 1 ♀, Heraka, Towada, 27/vii/1958, A. Abe (NA); 1 ex., Onabe, Towada, 27/vii/1958, A. Abe (NA); 1 ex., Shichinobe, 17/vi/1974, H. Hayakawa (NA); 1 ♂ 2 ♀♀, Ôhata, Shimokita, 26/vii/1983, S. Yamauchi; 3 exs., Mutsu, Nakotani, 19/vi/1987, H. Saitô; 1 ♀, Ditto, K. Shimoyama. Iwate-ken: 2 exs., Morioka, 18/vi/1944, no collector's name (NA); 1 ex., Nishine, 28/vi/1974, H. Hayakawa (NA); 1 ♂, 1 ex., Kuriya-gawa, 20/v/1974, H. Hayakawa (NA). Fukushima-ken: 1 ex., Hinoemata, Minami-Aizu, 15/vii/1965, K. Tazoe. Tochigi-ken: 4 exs., Nikkô, 23/viii/1958, M. Suwa; 2 ♂♂, 3 exs., Ôzan River., 5/viii, 1/ix/1981, H. Tanaka; 1 ex., Akada, Nishinasuno-machi, 8/viii/1991, S. Ohmomo

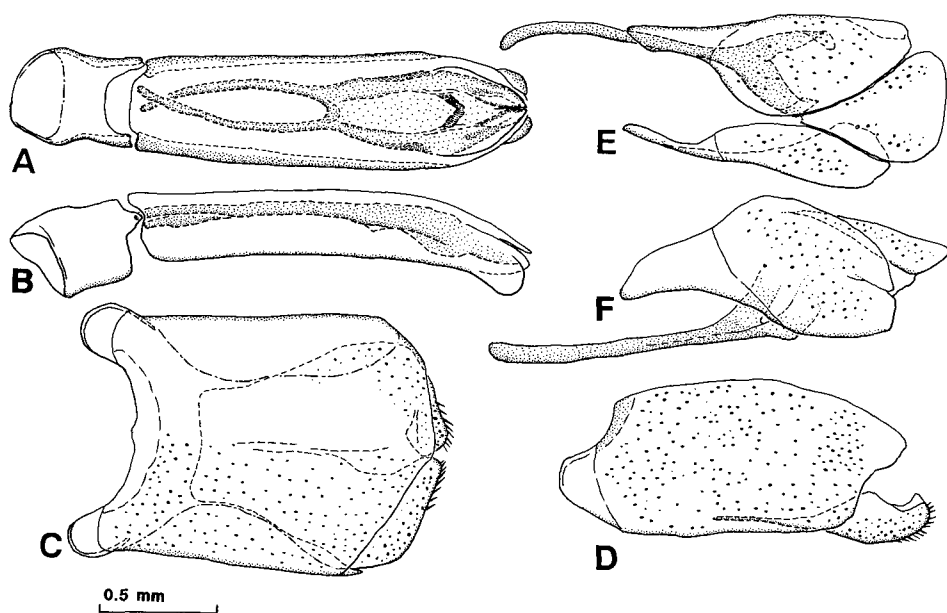


Fig. 76. *Hister concolor* Lewis. Male genitalia. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view.

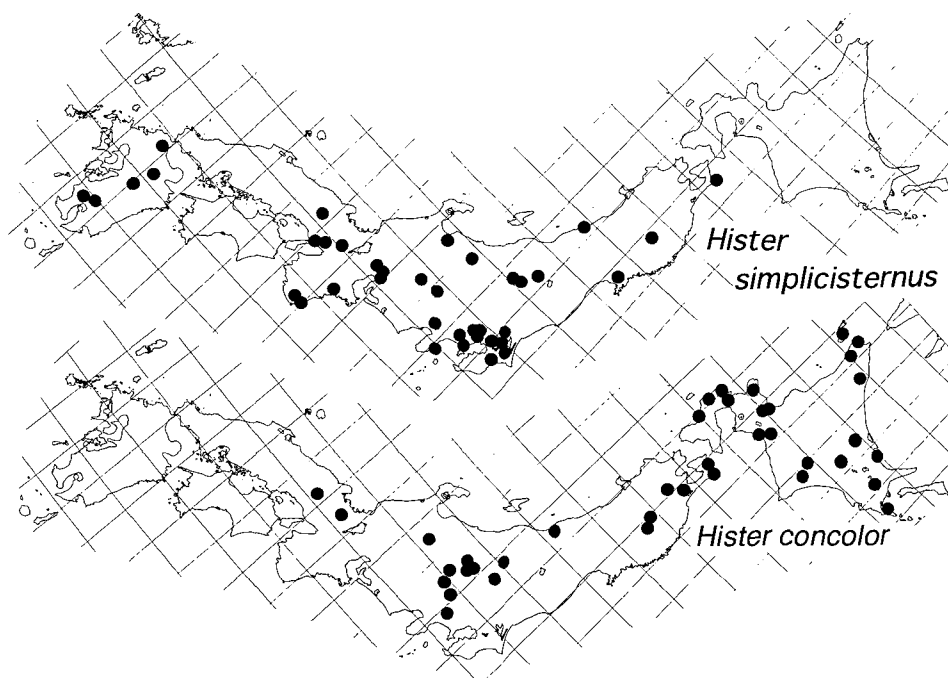


Fig. 77. Collection sites of *Hister simplicisternus* Lewis and *H. concolor* Lewis in Japan.

(TPM); 1 ex., Duns, Shikamihira, 27/vii/1985, T. Kumazawa (TPM); 1 ex., Kôtoke, Nikkô-shi, 9/x/1972, T. Miyamoto (TPM); 11 exs., Shiobara-machi, 29/viii/1979, T. Tanaka (TPM); 2 exs., Ôzasa-bokujô, Imaichi-shi, 25/viii/1991, S. Ohmomo (TPM); 3 exs., Ôzasa, Imaichi-shi, 4/x/1981, K. Aida, collected from cow dung (TPM); 5 exs., Ôzasa, Imaichi-shi, 4/x/1981, T. Miyamoto (TPM); 1 ex., Ditto, 25/vii/1981, K. Aida (TPM). Tôkyô-to: 1 ♀, Futatsu-yama, Oku-Chichibu, 2/ix/1939, K. Kojima (NA). Kanagwa-ken: 1 ex., Kashiwabara, Tanzawa, 13/viii/1920, Y. Yamamoto (NA). Niigata-ken: 1 ♀, Kurokawa, Echigo, 10/viii/1957, K. Baba. Nagano-ken: 1♂1♀, 2 exs., Togakushi, 27/vii/1978, T. Fujisawa (EIHU); 1 ex., Sugadaira, 24/vii/1978, T. Fujisawa (EIHU); 1 ex., Hokushin-bokujô, Sugadaira, 15/viii/1963, S. Kondo; 1 ex., Mt. Yatsu, 20/vii/1951, no collector's name (NSMT); 1 ex., Inako-bokujô, Mt. Yatsu, 26/vii/2602 (=1942), no collector's name (NSMT); 1♂, 2 exs., Tatehina, 15/viii/1966, K. Masumoto; 3♂♂5♀♀, 2 exs., Kita-Karuizawa, 24-25/viii/1937, K. Sakaguchi (NA); 1 ex., Karuizawa, 11-15/viii/1944, H. Inoue (NA); 1♂1♀, Kiyosato, 22, 23/vii/1981, M. Ôhara; 1♂, Saku, Meshimori-yama, 3/x/1973, M. Ishida (NA); 1♂2♀♀, Ogawa River, Kawakami Vill., 17/viii/1985, H. Tanaka; 3 exs., Ditto, 21/ix/1985, K. Haga; 1 ex., Hirasawa-bokujô, Meshimori-yama, 26/viii/1984, K. Haga; 1♂, 2 exs., Nobeyama, Minami-Saku, 18/viii/1972, M. Kiuchi; 1 ex., Asama-Kôgen, 10/viii/1967, M. Ishida. Gifu-ken: 1♂, 1 ex., Hirayu, 23-24/vii/1946, M. Hayashi. Kyôtô-fu: 1 ex., Kashiwabara, Tamba, 13/viii/1950, Y. Yamamoto (NA). Hyôgo-ken: 4 exs., Mitani-bokujô, Taka, 16/ix/1984, T. Itô.

Distribution (Fig. 77). Japan (Chishima Isles, Hokkaidô, Honshû); Continental China.

Remarks. This species is closely related to *Hister unicolor*, but distinguished by the dense and coarse punctation of the pygidium. It usually occurs in fresh cow dung, and sometimes under the carrion.

GENUS ZABROMORPHUS LEWIS, 1906

Zabromorphus Lewis, 1906a: 399 [type species: *Hister pachysomus* Ancy, 1882: 55. Originally designated].

This genus is closely related to the genus *Hister* Linnaeus in the characteristics of paramera, median lobe and spermatheca, with 21 species in the world.

Zabromorphus punctulatus (Wiedemann, 1819)

(Fig. 78, 79)

Hister punctulatus Wiedemann, 1819: 162 [Java]; Marseul, 1854: 256, t. 7, f. 60; 1873: 220 [noted, Japan: Kyûshû]; Nakane, 1981: 9 [listed].

Hister (Hister) punctulatus: Bickhardt, 1910a: 47 [catalogued]; Desbordes, 1919: 389 [Inde, Indochine, Ile Quelpare, Java].

Hister (Zabromorphus) punctulatus: Bickhardt, 1917: 177 [catalogued]; Kamiya and Takagi, 1938: 29 [listed].

Zabromorphus punctulatus: Mazur, 1984: 166 [noted of subsp. *salebrosus*]; Mazur, 1984: 204 [catalogued]; Hisamatsu, 1985b: 227, pl. 41, f. 9 [noted, photo].

Japanese name: Arame-emma-mushi.

Description based on a specimen collected from Owari (=Nagoya), Honshû. Male. Body length, PPL, 6.84 mm, PEL, 5.70 mm. Width, 4.28 mm. Body oblong, black and shining.

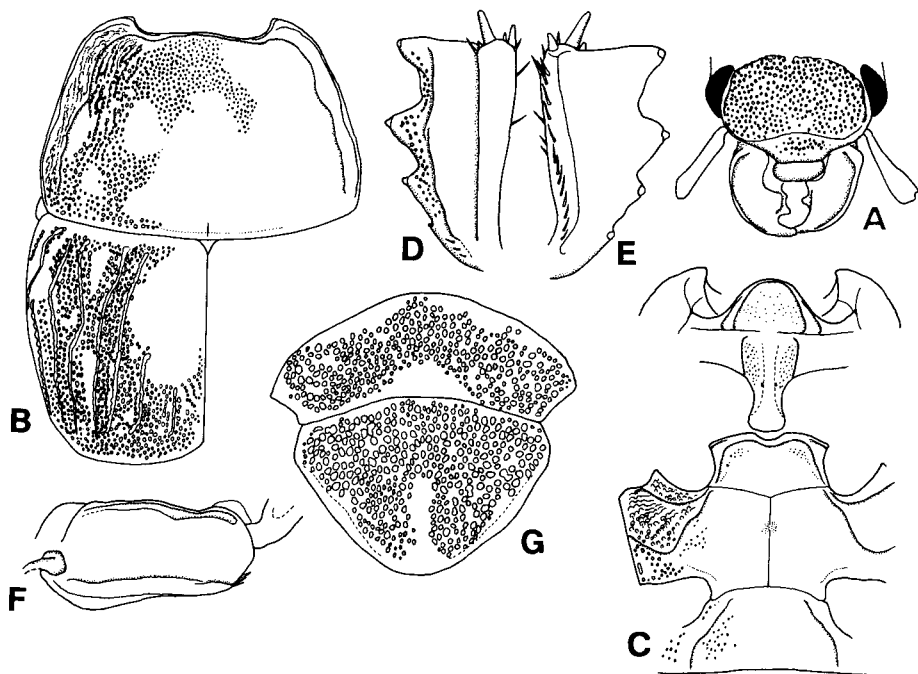


Fig. 78. *Zabromorphus punctulatus* (Wiedemann). A: Head, frontal view. B: Pronotum and left elytron, dorsal view. C: Pro-, meso-, metasterna and 1st abdominal sternum. D: Protibia, dorsal view. E: Ditto, ventral view. F: Profemur, ventral view. G: Propygidium and pygidium.

Frontal stria of head (Fig. 78A) complete. Disk within the stria densely and coarsely punctate. Clypeus densely covered with coarse punctures. Mandible well developed, its surface feebly concave.

Pronotal marginal stria (Fig. 78B) interrupted behind head, complete laterally. Outer lateral stria complete, close to lateral margin. Inner lateral stria complete, strongly and inwardly sinuate at apical 1/3 on lateral side, close to the margin behind head. Punctuation of surface strong, dense and deep, lacking on posteromedian area, the punctures occurring anteriorly on the median area dense, round and deep, those on lateral area dense, continued with each other and rugose. Antescutellar area of disk with a longitudinal puncture.

Epipleural fossette of elytra densely punctate. Marginal epipleural stria present on apical 2/3. Marginal elytral stria complete. External subhumeral stria (Fig. 78B) consisting of deep punctures and present on basal 1/2. Internal subhumeral stria deep, present on apical 2/3. Oblique stria indistinctly impressed on basal 1/3. First – 4th dorsal striae complete, the 1st and 2nd strongly sinuate at basal 1/3. Fifth dorsal stria present on apical 1/3. Sutural stria present on apical 1/4. Disk of elytra densely covered with large and deep punctures inside internal subhumeral stria, except on basal 2/3 between 4th dorsal and suture, a basal humeral area, a median area between 1st and 2nd dorsal striae, basal and apical small areas between the 2nd and 3rd, and an apical area between the 4th and 5th. These impunctated areas often reduced or broadened.

Propygidium (Fig. 78G) densely covered with coarse punctures, which are absent in the middle of the apical area. Pygidium densely covered with large and round

punctures, except on area along the lateroposterior margin and on an oblong apical area on the meson, which are impunctate.

Prosternal lobe (Fig. 78C) round anteriorly, its marginal stria complete. Prosternal keel rather narrow, without carinal stria. Epipleura of prothorax with long hairs.

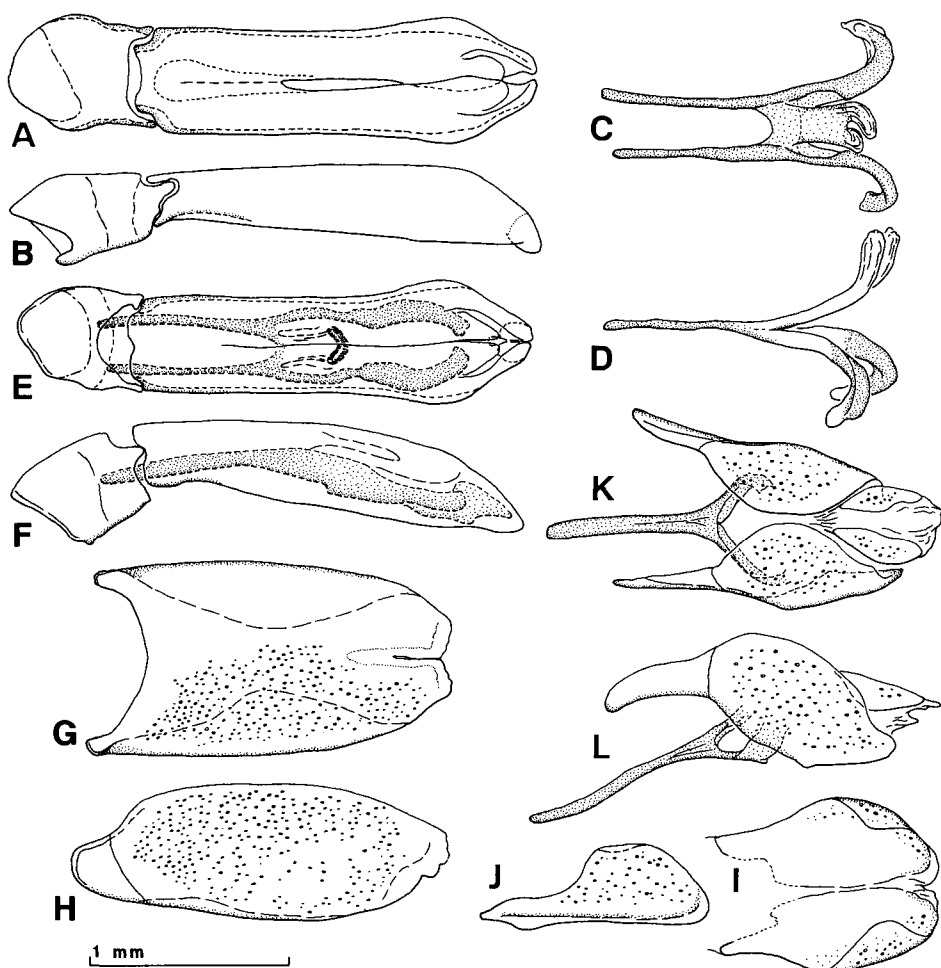


Fig. 79. *Zabromorphus punctulatus* (Wiedemann). Male genitalia. A, E: Aedeagus, dorsal view. B, F: Ditto, lateral view. C: Median lobe, dorsal view. D: Ditto, lateral view. G: 8th tergite, dorsal view. H: Ditto, lateral view. I: 8th sternum, dorsal view. J: Ditto, lateral view. K: 9th and 10th tergites and 9th sternum (spicule), dorsal view. L: Ditto, lateral view. A – D: Specimen collected in Aichi-ken, Japan. E – L: in Philipines.

Table. 15. Biometric data of *Zabromorphus punctulatus* (Weidermann).

	Owari	Ôsaka A. P.	Taiwan (n=2)	Philippines
APW	2.00	1.62	2.09	1.90
PPW	4.66	3.99	4.92-5.23	4.37
PL	2.85	2.38	3.33	2.85
EL	4.28	3.33	3.33-3.61	4.66
EW	5.04	4.28	5.23-5.61	4.66
ProW	2.95	2.66	3.33-3.52	2.95
ProL	1.33	1.05	1.43	1.24
PyL	1.71	1.43	1.90	1.62
PTL	1.90	1.90	1.90-2.09	1.81
MSTL	1.71	1.43	1.71	1.71
MITL	2.38	1.71	2.19-2.38	2.19
PEL	6.65	5.70	7.13-7.41	6.27
PPL	7.60	6.84	8.27-8.65	6.94

Anterior margin of mesosternum (Fig. 78C) feebly emarginate at middle. Marginal stria of mesosternum complete. A short stria impressed behind each anterolateral angle. Disk of mesosternum sparsely and coarsely punctate laterally. Meso-metasternal stria complete, strongly angulate at middle. Lateral metasternal stria extending posteriorly, united with an oblique stria which inwardly extends from the middle of the metasternal-metepisternal suture. Lateral disk of metasternum sparsely with large and round punctures, and with short hairs. Intercostal disk of 1st abdominal sternum completely striate on each side.

Protibia (Fig. 78E, F) with 4 teeth on outer margin, the apical 2 large, and apical margin without teeth. Dorsal surface of protibia with a stria along the base of teeth, the outside stria densely punctate. Profemoral stria (Fig. 78F) complete and carinate.

Male genitalia as shown in Fig. 79.

Specimens examined. [Honshû] Aichi-ken: 1♂, Shikatsu-mura, Owari, 27/vi/1948, S. Ôsawa (NA). Ôsaka-fu: 1 ex., Ôsaka Air Port, Ôsaka, 6/vi/1991, Y. Kusui (introduced?).

[Taiwan] 1♀, 1 ex., Taizhong, 5/iv/1907, S. Matsumura (EIHU).

[Philippines] Luzon Is.: 1♂, Asin hot spring, Luzon, 18/viii/1976, K. Matsuda.

Distribution. Japan (Honshû, Kyûshû); Taiwan; Indochina; Java, Philippines. New to the Philippines.

Remarks. This species is easily recognized by having a dense and coarse punctation on the elytra and pronotum, and by the dorsal surface of the protibia with a short stria on the base of teeth. The specimen collected in Ôsaka Air Port may be an introduced individual, because it is small in size (Table 15), strongly metallic blue and slightly different in the punctation of the pronotum; the punctational pattern is very similar to that of specimens from Taiwan and the Philippines.

GENUS MEROHISTER REITTER, 1909

Merohister Reitter, 1909: 282; Ôhara, 1992a: 378.

This genus has already been revised in Ôhara (1992a, b). Herein I give additional records to *Merohister jekeli* and *M. aino*.

Key to the Japanese species of the genus *Merohister*

- 1(2) Head with a few coarse punctures just behind frontal stria anteriorly. *M. aino* (Lewis, 1884)
- 2(1) Head without coarse punctures within frontal stria.
- 3(4) Meso- and metatibiae normal, not dilated. Punctuation of pronotum usually present on apical 1/2 of lateral area. Paramera of male genitalia slender. *M. jekeli* (Marseul, 1857)
- 4(3) Meso- and metatibiae broadly dilated. Punctuation of pronotum present on whole lateral area. Paramera of male genitalia stout. *M. uenoi* M. Ôhara, 1992

Merohister jekeli (Marseul, 1857)

Merohister jekeli: Ôhara, 1992a: 375.

Japanese name: Emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 6 exs., Tôya-Naka-no-shima, Abuta, 29/vii/1993, S. Hori (HOR).

[Honshû] Tochigi-ken: 1 ex., Yunishi-gawa, 11/viii/1980, M. Inaizumi (TPM); 1 ex., Kawamata, Kuriyama-mura, 7/viii/1978, T. Tanaka (TPM); 10 exs., Hikida, Kanuma-shi, 3, 5, 16/vi/1984, M. Takaoka (TPM); 1 ex., Aoyagi, Kuriyama, 16/vi/1979, S. Takahashi (TPM); 1 ex., Mashiko, 3/viii/1979, M. Inaizumi (TPM); 1 ex., Kwaraya, Utsunomiya-shi, 20/viii/1981, M. Miyamoto (TPM); 1 ex., Ditto, 25/vi/1981, K. Aida, collected by a dead crow (TPM); 1 ex., Tomita, Ashikaga-shi, 4/x/1981, H. Ohkawa (TPM). Kanagawa-ken: 1 ex., Yokono, Hadano City, 2/vi/1989, Y. Okushima.

[Kyûshû] Nagasaki-ken: 1 ex., Kabashima Is., Nishisonoki, 13/vi/1992, Y. Kusui.

Distribution. Japan (Chishima Isles, Hokkaidô, Honshû, Shikoku, Kyûshû, Sado Is., Izu Isles, Tsushima Isles, Nansei Isles); Sakhalin; Primorskij Kray; Korea; Taiwan (proper, Lanyu Is.); Continental China; Philippines; India.

Merohister aino (Lewis, 1884)

Merohister aino: Ôhara, 1992a: 385.

Japanese name: Ainu-emma-mushi.

Specimens examined [additional records]. [Honshû] Tochigi-ken: 1 ex., Yunishi-gawa, 25/vi/1980, T. Tanaka (TPM).

Distribution. Japan (Hokkaidô, Honshû).

Merohister uenoi M. Ôhara, 1992

Merohister uenoi M. Ôhara, 1992b: 495.

Japanese name: Amami-emma-mushi.

Distribution. Japan (Nansei Isles: Amami-Ôshima Is.).

GENUS *ATHOLUS* THOMSON, 1859

This genus has already been revised in Ôhara (1992c, 1993a). I give some additional records.

Key to the Japanese species of the genus *Atholus*

- 1(2) Elytra red maculate. *A. bimaculatus* (Linnaeus, 1758)
- 2(1) Elytra entirely black.
- 3(4) Lateral pronotal stria present on apical 1/2. Apical end of 3rd elytral dorsal stria strongly bent inwards. *A. coelestis* (Marseul, 1857)
- 4(3) Lateral pronotal stria nearly entire. Third elytral dorsal stria normal.
- 5(6) Fifth elytral dorsal stria present on apical 1/2. *A. pirithous* (Marseul, 1873)
- 6(5) Fifth elytral dorsal stria nearly complete.
- 7(8) Lateral disk of metasternum with long hairs. Anterior margin of prosternal lobe narrowly truncate on medium. Punctuation of propygidium even. *A. depistor* (Marseul, 1873)
- 8(7) Lateral disk of metasternum without hairs. Anterior margin of prosternal lobe round. Punctuation of propygidium becoming coarser basally.
..... *A. duodecimstriatus quatuordecimstriatus* (Gyllenhal, 1808)

Atholus bimaculatus (Linnaeus, 1758)

Atholus bimaculatus: Ôhara, 1992c: 169.

Japanese name: Aka-mon-emma-mushi.

Distribution. Japan (Oki Is., Kyûshû, Iki Is., Tsushima Isles); Europe; Holarctic Region; Argentina (introduced); Chad (introduced); India; Tenasserim.

Atholus coelestis (Marseul, 1857)

Atholus coelestis: Ôhara, 1992c: 173.

Japanese name: Sujimagari-emma-mushi.

Specimens examined [additional records]. [Nansei Isles] Yonaguni Is.: 1 ex., Mt. Urabu-dake, 19/ii/1990, Y. Okushima.

Distribution. Japan (Nansei Isles); Taiwan; Continental China; India; Sri Lanka; Indonesia (Java, Celebes).

Atholus depistor (Marseul, 1873)

Atholus depistor: Ôhara, 1992c: 176.

Japanese name: Munakubo-emma-mushi.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Nansei Isles, Ogasawara Isles); Taiwan; southeastern China; Korea; Siberia; Primorskij Kray.

Atholus duodecimstriatus quatuordecimstriatus (Gyllenhal, 1808)

Atholus duodecimstriatus quatuordecimstriatus: Ôhara, 1993a: 135.

Japanese name: Ko-tsuya-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Hamayûchi, Wakkanai, 23/viii/1993, S. Hori (HOR); 1 ex., Futatsu-yama, Shibecha, Kushiro, 6/vi/1974, K. Ijima (IJ); 1 ex.,

Tokachi-gawa-kakô, Ôtsu, Toyohoro-chô, 27/v/1990, J. Mochizuki; 2 exs., Sapporo, 9/vii/1985, M. Ôhara.

[Honshû] Tochigi-ken: 4 exs., Ôzawa-bokujô, Imaichi-shi, 25/vii/1981, K. Aida (TPM); 1 ex., Kawaraya-machi, Utsunomiya-shi, 20/vii/1981, K. Aida (TPM).

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Tsushima Isles, Nansei Isles); North Europe and Central Europe (at high altitudes); Siberia; Mongolia; Continental China; Taiwan.

Atholus pirithous (Marseul, 1873)

Atholus pirithous: Ôhara, 1993a: 141.

Japanese name: Tsuya-maru-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 4 exs., Futatsu-yama, Shibechea, Kushiro, 15/ix/1955, 12/vii/1975, 28/vii/1991, K. Ijima (IJ); 3 exs., Sapporo, 7/vi/1985, M. Ôhara.

[Honshû] Tochigi-ken: 1 ex., Kawaraya-machi, Utsunomiya-shi, 20/vii/1981, K. Aida (TPM); 1 ex., Kawaraya-machi, Utsunomiya-shi, 3/vii/1981, K. Aida, collected from a dead crow (TPM); 3 exs., Turuta-Numa, Utsunomiya-shi, 13-14/v/1991, no collector's name (TPM); 1 ex., Tomita, Ashikaga-shi, 4/x/1981, H. Ohkawa (TPM).

[Kyûshû] Gotô Isles.: 1 ex., Uki Is., 15/v/1993, Y. Kusui.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Tsushima Isles, Gotô Isles, Nansei Isles); Taiwan; Continental China; Korea; Primorskij Kray; Viet-Nam.

GENUS MARGARINOTUS MARSEUL, 1853

Margarinotus Marseul, 1853: 549; Wenzel, 1944: 123; Ôhara, 1989: 6.

This genus has already been revised in Ôhara (1989). Herein I add some specimens newly examined and renew the key to the Japanese species thereafter.

Key to the Japanese species of the genus *Margarinotus*

- 1(2) Lateral sides of pronotum strongly depressed. Intercoxal disk of metasternum wholly covered with coarse punctures. Subgenus *Kurilister* Tishechkin, 1992
..... *M. (K.) kurbatovi* (Tishechkin, 1992)
- 2(1) Lateral sides of pronotum not depressed. Intercoxal disk of metasternum not punctate (rarely punctate, with punctures only along lateral metasternal stria).
- 2(19) Pronotum with 2 lateral pronotal striae. Subgenus *Ptomister* Houlber et Monnot, 1923
- 3(4) Inner lateral pronotal stria strongly undulate behind the eyes. *M. (P.) boleti* (Lewis, 1884)
- 4(3) Inner lateral pronotal stria not strongly undulate behind eyes.
- 5(16) Prosternal keel without carinal stria (sometimes with an obsolete one in *striola*, *weymarni* and *reichardti*, but these species are densely covered with moderate-sized punctures on pygidium).
- 6(15) Body larger, 5.0 – 9.2 mm in length.
- 7(10) Lateral stria of metasternum united with oblique stria of metasternum.
- 8(9) Lateral disk of metasternum with long hairs. *M. (P.) cadavericola* (Bickhardt, 1920)
- 9(8) Lateral disk of metasternum without hairs. *M. (P.) agnatus* (Lewis, 1884)
- 10(7) Lateral stria of metasternum not united with oblique stria of metasternum.
- 11(12) Lateral disk of metasternum without hairs. *M. (P.) reichardti* Kryzhanovskij, 1976
- 12(11) Lateral disk of metasternum with long hairs.
- 13(14) Outer lateral pronotal stria extending beyond basal end of inner one.
..... *M. (P.) weymarni* Wenzel, 1944
- 14(13) Outer lateral pronotal stria not extending beyond basal end of inner one.
..... *M. (P.) striola* (C. R. Sahlberg, 1819)

- 15(6) Body smaller, 4.0 – 4.5 mm in length. *M. (P.) yezoensis* M. Ôhara, 1989
 16(5) Prosternal keel with carinal striae. Pygidium sparsely covered with coarse punctures.
 17(18) Inside the inner pronotal stria densely with large punctures.
 *M. (P.) marginepunctatus* (Lewis, 1879)
 18(17) Inside the inner pronotal stria without large punctures. *M. (P.) sutus* (Lewis, 1884)
 19(2) Pronotum with 1 lateral pronotal stria. Subgenus *Grammostethus* Lewis, 1906
 *M. (G.) niponicus* (Lewis, 1884)

Margarinotus (Kurilister) kurbatovi (Tishechkin, 1992)

Kurilister kurbatovi Tishechkin, 1992: 328 [Kuriles, SW Kunashiri Is.].

Margarinotus (Kurilister) kurbatovi: Ôhara, 1993b: 3.

Japanese name: Hirata-kaku-hime-emma-mushi.

Distribution. Japan (Chishima Isles, Hokkaidô, Honshû, Shikoku).

Margarinotus (Ptomister) boleti (Lewis, 1884)

Margarinotus (Ptomister) boleti: Ôhara, 1989: 9.

Japanese name: Kinoko-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Futatsu-yama, Shibechea, Kushiro, 10/ix/1976, K. Ijima (IJ); 1♂ 1♀, Kariba-yama, Osima Peninsula, 19-23/vii/1972, no collector's name (EIHU).

[Honshû] Fukushima-ken: 1 ex., Futamata-zawa, Yumoto, Iwase, 15/viii/1950, Y. Kurosawa (NSMT); 1 ex., Nagarazawa, Asahida, Minami-Aizu, 1/viii/1949, Y. Kurosawa (NSMT); 1 ex., Akaiwa, Fukushima-shi, 25/vi/1960, K. Tazoe. Tochigi-ken: 1 ex., Chugushi, Nikkô, 9-11/viii/2603 (=1903), T. Adachi (NSMT); 1 ex., Kotoku, Nikkô, 8/vii/1967, J. Aoki (NSMT); 1 ex., Yunishi-gawa, Kuriyama-mura, Shioya-gun, 15/vi/1980, M. Inaizumi (TPM); 1 ex., Ditto, 11/viii/1980, S. Sugimoto (TPM); 1 ex., Yokokawa, Fujiwara-machi, Shioya-gun, 16/vi/1985, T. Miyamoto (TPM); 1 ex., Yunago-sawa, Yunishi-gawa, Kuriyama-mura, Shioya-gun, 8/vii/1991, K. Satoh (TPM); 3 exs., Minamikata, Yamizo-yama, Kurobane-machi, 12/viii/1984, M. Takaoka (TPM). Nagano-ken: 1 ex., Kami-Kôchi, Tokusawa, 25/viii/1967, H. Higuchi. Gifu-ken: 1 ex., Oshirakawa, Shirakawa-mura, 26/vii/1987, Y. Takai; 1 ex., Kammuri-yama-tôge, Tokuyama-mura, Gifu, 28/vii/1985, Y. Takai.

[Kyûshû] Kagoshima-ken: 1 ex., Ônami-ike, Kirishima, 5/iv/1985, H. Shimozono.

Distribution. Japan (Chishima Isles, Hokkaidô, Honshû, Shikoku, Kyûshû); Taiwan.

Margarinotus (Ptomister) cadavericola (Bickhardt, 1920)

Margarinotus (Ptomister) cadavericola: Ôhara, 1989: 13.

Japanese name: Ôsawa-hime-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Harutori, Kushiro-shi, 23/x/1983, E. Osaki; 1 ex., Seiryû-Bashi, Bisei-gawa-Jôryû, Memuro, 2/ix/1990, K. Haga; 1 ex., Sapporo, v/1904, no collector's name.; 1 ex., Ditto, 20/v/1955, T. Kumata (EIHU); 1 ex., Hirafu side, alt. 1000 – 1400 m, Mt. Yôtei, Kutchan, 30/viii/1993, M. Ôhara; 7 exs., Tôya-Naka-no-shima, Abuta, 17, 29/vii, 28/viii/1993, S. Hori (HOR).

[Honshû] Aomori-ken: 1 ex., Takada, Aomori-shi, 14/vii/1986, H. Saitô. Shizuoka-ken: 3 exs., Fujinomiya-shi, 2/viii/1978, S. Mochizuki; 1 ex., Koizumi, Fujinomiya-shi, 1/xi/1978, S. Mochizuki.

Distribution. Japan (Chishima Isles, Hokkaidô, Honshû, Kyûshû); Primorskij Kray; Continental China.

Margarinotus (Ptomister) agnatus (Lewis, 1884)

Margarinotus (Ptomister) agnatus: Ôhara, 1989: 15.

Japanese name: Nise-hime-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Futatsu-yama, Shibeche, Kushiro, 26/vi/1988, K. Ijima (IJ); 2♂♂, 4 exs., Sapporo, 20/v/1955, T. Kumata (EIHU); 2 exs., Maruyama, Sapporo, 8/vi/1954, T. Kumata (EIHU); 1 ex., Moiwa, Sapporo, 4/vi/1905, no collector's name. (EIHU); 5 exs., Nopporo, 24/vi, 1, 21/vii/1988, M. Ôhara; 2 exs., Hirafu side, alt. 350 m, Mt. Yôtei, Kutchan, 20/viii/1993, M. Ôhara; 2 exs., Ditto, alt. 350 – 600 m, 30/viii/1993, M. Ôhara; 1 ex., Mt. Hakodate, 26/viii/1951, K. Honma (EIHU); 20 exs., Tôyo-Naka-no-shima, Abuta, 26/v, 12/vi, 17, 28, 29/vii, 28/ix/1993, S. Hori (HOR).

[Honshû] Fukushima-ken: 1 ex., Fukiya-yama, Monden, Kita-Aizu, 21/v/1948, K. Hayashi (NSMT); 1 ex., Nittahara-Chippu-Kôjo, Tateiwa-mura, 1/vi/1993, K. Haga. Tochigi-ken: 2 exs., Nikkô, 14/vii/1943, no collector's name (NSMT); 1 ex., Awanono-chô, 14/v/1989, H. Yoshitomi (TPM); 1 ex., Senjugahara, Nikkô-shi, 21/vi/1985, K. Niimi (TPM); 4 exs., Hikita, Kanuma-shi, 21/v/1984, M. Takaoka (TPM). Tôkyô-to: 1 ex., Takao-san, 23/iv/1969, H. Takizawa. Shizuoka-ken: 4 exs., Subaru Line, Ni-gôme, Fujinomiya-shi, 2/viii/1978, S. Mochizuki.

[Shikoku] Tokushima-ken: 1 ex., Okunoi, Yamagawa, 16/iv/1986, S. Mano.

[Kyûshû] Nagasaki-ken: 1 ex., Kagasahima Is., Nishisonoki, 13/v/1992, Y. Kusui.

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Himalaya; North India; Korea.

Margarinotus (Ptomister) weymarni Wenzel, 1944

Margarinotus (Ptomister) weymarni: Ôhara, 1989: 19.

Japanese name: Hime-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 3 exs., Futatsu-yama, Shibeche, Kushiro, 10/vi/1975, 9/v/1990, K. Ijima (IJ); 1 ex., Oku-Shibetsu, Kamikawa, Teshio, 16/v/1947, T. Hasegawa (NSMT); 1 ex., Abashiri, 21/iv/1950, T. Kumata (EIHU); 1 ex., Sapporo, 30/v/1987, M. Ôhara; 2 exs., Ditto, 6/viii/?, 6/ix/?, no collector's name (EIHU); 2 exs., 1♀, Sapporo, no date, S. Matsumura (EIHU); 1♂, 1 ex., Ditto, no date, Ishida; 1 ex., Ditto, 16/v/1955, S. Takagi (EIHU); 1 ex., Moiwa, Sapporo, 19/iv/1965, T. Kôcha (EIHU); 1 ex., Maruyama, Sapporo, 23/ix/1953, S. Takagi (EIHU); 2 exs., Nopporo, 24/vi, 21/vii/1988, M. Ôhara; 1 ex., Menashibetsu-gawa, Shizunai, 5/vii/1993, S. Hori (HOR); 1 ex., Mt. Kariba, Shimamaki, 6-8/viii/1988, M. Ôhara, T. Tanabe and K. Sayama; 1 ex., Kita-Hiyama, 28/v/1988, M. Ôhara.

[Honshû] Aomori-ken: 1 ex., Aomori, vi/1904, no collector's name; 1 ex., Minami-Tsugaru, 19/vi/1952, K. Shimoyama; 1♀, Hachinohe, 10/vi/1934, S. Fukuda (Fukuda Collection). Fukushima-ken: 1 ex., Tokusa, Tateiwa, 26/v/1991, K. Haga. Yamagata-ken: 4 exs., Yonezawa, 12/iv/1941, 16/v/1944, Y. Kurosawa (NSMT); 1 ex., Ditto, 3/v/1944, A. Suzuki. Fukushima-ken: 1 ex., Yunohana, Tateiwa, Minami-Aizu, 8/vii/1948, Y. Kurosawa (NSMT); 1 ex., Aizu-Wakamatsu, Fukushima, 15/v/1949, no collector's name (NSMT); 5 exs., Wakamatsu, 13/iv/1946, 5/v/1948, K. Nagayama (NSMT). Tochigi-ken: 1 ex., Miyuki, Utsunomiya-shi, 1/vi/1977, T. Kumazawa (TPM); 1 ex., Hikita, Kanuma-shi, 10/vi/1984, M. Takaoka (TPM). Tôkyô-to: 1 ex., Shimonoge, Tama-gawa, 28/iv/1929, no collector's name; 2 exs., Arakawa, 13/iii/1960, S. Fukumoto; 1 ex., Ushigome, 20/iv/1988, T. Wakamori (NSMT). Kanagawa-ken: 2 exs., Hatano, 15/iii/1974, 6/vi/1985, H. Takizawa; 1 ex., Yokohama, vi/1923, J. F. Illingworth (BSM). Nagano-ken: 1♀, Utsugushi-ga-hara,

24/vii/1952, K. Nishikawa (NSMT). Shizuoka-ken: 15 exs., Hamaoka-chô, 2, 15/v, 31/x, 3, 7, 30/xi/1982, 28/iii, 24/v/1983, 2/iv, 11/xi/1984, S. Mochizuki. Toyama-ken: 1 ex., Toyama, 20/vi/1955, S. Takagi (EIHU).

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Khabarovskij and Primorskij Kray; North-eastern China (Manchuria).

Margarinotus (Ptomister) reichardti Kryzhanovskij, 1976

Margarinotus (Ptomister) reichardti: Ôhara, 1989: 22.

Japanese name: Tôhoku-hime-emma-mushi.

Distribution. Japan (Honshû); Taiwan; Continental China; Korea; Primorskij and southern Khabarovskij Kray.

Margarinotus (Ptomister) striola (C. R. Sahlberg, 1819)

Margarinotus (Ptomister) striola: Ôhara, 1989: 24.

Japanese name: Ezo-hime-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 1 ex., Futatsu-yama, Shibeche, Kushiro, 25/v/1972, 10/vi/1975, 10/v/1982, K. Ijima (IJ); 2♂♂ 1♀, 5 exs., Moiwa, 21/iv, 11/vi/1905, no collector's name (EIHU); 12 exs., Nopporo, 29/v/1987, 7/vii/1988, M. Ôhara; 1 ex., Jôzankai, 5/vii/1910, S. Matsumura (EIHU); 1 ex., Menashibetu-gawa, Shizunai, 5/vii/1993, S. Hori (HOR); 2 exs., Hirafu side, alt. 350 m, Mt. Yôtei, Kutchan, 20/viii/1993, M. Ôhara; 1 ex., Ditto, alt. 350 – 600 m, 30/viii/1993, M. Ôhara.

Distribution. Japan (Hokkaidô); North Europe; Siberia; Korea; North-eastern China (Manchuria)

Margarinotus (Ptomister) yezoensis M. Ôhara, 1989

Margarinotus (Ptomister) yezoensis: Ôhara, 1989: 27.

Japanese name: Nopporo-hime-emma-mushi.

Specimens examined [additional records]. [Honshû] Tôkyô-to: 1 ex., Ushigome, 4/vi/1933, T. Wakamori (NSMT). Nagano-ken: 1 ex., Shimashima-dani, 4/vi/1940, T. Nimura (NSMT).

Distribution. Japan (Hokkaidô, Honshû).

Margarinotus (Ptomister) marginepunctatus (Lewis, 1884)

Margarinotus (Ptomister) marginepunctatus: Ôhara, 1989: 31.

Japanese name: Heriten-emma-mushi.

Specimens examined [additional records]. [Honshû] Fukushima-ken: 1 ex., Kuromori, Ôta, Kita-Aizu, 28/iv/1951, Y. Kurosawa (NSMT). Yamanashi-ken: 1 ex., Senyo-ga-taki, Shôsen-kyô, Kôfu-shi, 11/iv/1992, K. Haga. Nagano-ken: 1 ex., Kita Alps, Nanakura, 14/vii/1967, K. Tazoe.

Distribution. Japan (Hokkaidô, Honshû, Shikoku).

Margarinotus (Ptomister) sutus (Lewis, 1884)

Margarinotus sutus: Wenzel, 1944: 126.

Margarinotus (Ptomister) sutus: Ôhara, 1989: 34.

Japanese name: Hakone-emma-mushi.

Specimens examined [additional records]. [Honshû] Aomori-ken: 1 ex., Kuroishi, Ôkawara, 17/v/1992, H. Saitô. Yamagata-ken: 1 ex., Shirabutakayu, 17/vi/1980, S. Ohmomo. Fukushima-ken: 1 ex., Aizu-Wakamatsu, 2/v/1948, Y. Kurosawa (NSMT); 1 ex., Jabami, Nagaino, Ônuma, 25/vi/1941, Y. Kurosawa (NSMT); 1 ex., Senaka-aburi, Higashi-yama, 28/v/1947, Y. Kurosawa (NSMT); 1 ex., Naka-Moniwa, 15/v/1973, K. Tazoe. Tochigi-ken: 1 ex., Miyuki, Utsunomiya-shi, 29/v/1976, T. Kumazawa (TPM); 1 ex., Moro-yama, Kanuma-shi, 12/v/1983, M. Takaoka, collected from a fungus, *Armillaria* sp. (TPM). Tôkyô-to: 2 exs., Arakawa, 13/iii/1960, S. Fukumoto (NSMT). Shiga-ken: 5 exs., Ibuki-yama, 10/vi/1990, H. Takizawa.

Distribution. Japan (Honshû, Shikoku, Kyûshû); Korea.

Margarinotus (Grammostethus) niponicus (Lewis, 1895)

Margarinotus (Grammostethus) niponicus: Ôhara, 1989: 37.

Japanese name: Ko-emma-mushi.

Specimens examined [additional records]. [Hokkaidô] 2 exs., Shirikoma-dake, Naka-Tombetsu, 22/viii/1993, S. Hori (HOR); 3 exs., Raibetsu, Shibeche, Kushiro, 27/vi/1975, 25/vii/1983, 3/vii/1985, K. Ijima (IJ); 3 exs., Futatsu-yama, Shibeche, Kushiro, 17/vi/1972, 6/vii/1974, 8/vii/1984, K. Ijima (IJ); 2 exs., Okushihoro, Teshio, 14/vi/1951, T. Hasegawa (NSMT); 1 ex., Motokamabetsu, Kita-Moshiri, 9/vii/1987, T. N.; 5 exs., Kenebetsu, Nemuro, 2/viii/1973, T. Kumata (EIHU); 1 ex., Onne-shisui-damu, Minami-Kitoushi, Ashoro, 11/vii/1992, K. Haga; 1 ex., Kitanosawa, Sapporo, 18/vii, 1/viii/1993, S. Hori (HOR); 1 ex., Moiwa, Sapporo, 11/vi/1904, no collector's name (EIHU); 2 exs., Maruyama, Sapporo, 26/vi/1913, S. Matsumura (EIHU); 1 ex., Ditto, 13/vi/1939, Y. Nishijima (EIHU); 1 ex., Ditto, 10/vi/1954, M. Konishi (EIHU); 1 ex., Sapporo, no date and no collector's name (EIHU); 1 ex., Ditto, no date, S. Matsumura (EIHU); 1 ex., Ditto, 1903, no collector's name (EIHU); 2 exs., Ditto, 20/iv/1925, 25/v/1942, H. Kôno (EIHU); 3♂♂ 2♀♀, 9 exs., Ditto, 22/vi/1985, 4/vi/1987, M. Ôhara; 19 exs., Hokkaidô Univ., Sapporo, 27/vi/1985, M. Ôhara; 1 ex., Mt. Jôten, Sapporo, 6/vi/1978, T. Fujisawa (EIHU); 5 exs., Misumai, Sapporo, 9, 12/vii/1991, K. Sayama; 2 exs., Jôzankei, 27/vi/1954, K. Honma (EIHU); 1 ex., Ditto, 27/vi/1954, M. Konishi (EIHU); 1 ex., Nopporo, 17/vi/1936, S. Hirai; 1 ex., Ditto, 29/v/1987, M. Ôhara; 1 ex., Naganuma, 20/v/1991, A. Iwasaki; 3 exs., Shikotsu-ko, 6/vii/1988, M. Ôhara; 7 exs., Hobetsu, 23/vi/1985, M. Ôhara; 6 exs., Bibi, Chitose, 4-18/vi/1993, S. Hori (HOR); 1 ex., Meguro, Erimo, 23/vi, 7/vii/1993, S. Hori (HOR); 1 ex., Mt. Yôtei, Kutchan, 29/vii/1989, N. Yasuda; 16 exs., Hirafu side, alt. 350 m, Mt. Yôtei, Kutchan, 20/viii/1993, M. Ôhara; 6 exs., Ditto, alt. 350 – 600 m, 30/viii/1993, M. Ôhara; 3 exs., Sorioi-yama, Rusutsu, 17-27/vi/1991, S. Hori (HOR); 9 exs., Tôya-Naka-no-shima, Abuta, 28/vi, 17, 29/vii/1993, S. Hori (HOR); 1 ex., Kariba-yama, Oshima Penins., 19-23/vii/1972, H. U. Ent. Inst. (EIHU).

[Honshû] Aomori-ken: 1 ex., Tsuta-onsen, 14/vii/1954, T. Kumata (EIHU); 1 ex., Ditto, 25/vii/1954, J. Aoki (NSMT); 1 ex., Minami-Tsugaru, 18/x/1953, K. Shimoyama (NA). Yamagata-ken: 1 ex., Yonezawa, 25/v/1944, Y. Kurosawa (NSMT). Fukushima-ken: 1 ex., Wakamatsu, 30/vi/1949, Y. Kurosawa (NSMT); 1 ex., Senaka-aburi, Higashi-yama, Kita-Aizu, 13/vi/1948, K. Ikarashi (NSMT); 3 exs., Futamata-zawa, Yumoto, Iwase, 16/vii/1949, Y. Kurosawa (NSMT); 5 exs., Oyama, Monden, Kita-Aizu, 21/v/1949, Y. Kurosawa (NA); 2 exs., Yunohana, Tateiwa, Minami-Aizu, 5-8/viii/1983, Y. Kurosawa and S. Okajima; 1 ex., Moniwa, Masuzawa, 3/vii/1970, K. Tazoe; 1 ex., Nanairi, Hinoemata, 22/vii/1990, N. M. Ibaraki-ken: 8 exs., Ami-machi, 16/vi/1985, K. Akiyama. Saitama-ken: 1 ex., Mt. Tatekawa, 10/vi/1979, H. Takizawa. Tochigi-ken: 2 exs., Chûzenji, 19/viii/1915, E. Gallois (EIHU); 3 exs., Nikkô, 17/vii/1957, Y. Kurosawa (NSMT); 1 ex., Chugushi,

Nikkô, 9-11/viii/2603 (=1943), T. Adachi (NSMT); 1 ex., Yamizo-yama, Tanakura-machi, 25/vii/1985, K. Tsurumi (TPM); 2 exs., Shimo-Toshimo-machi, Utsunomiya-shi, 24/iv, 5/viii/1992, K. Satoh (TPM); 1 ex., Shimo-Togami-machi, Utsunomiya-shi, 10/vi/1990, K. Satoh (TPM); 3 exs., Futaba-chô, Utsunomiya-shi, 18, 29/viii/1972, T. Miyamoto (TPM); 1 ex., Kawaraya, Utsunomiya-shi, 25/vi/1981, K. Aida, collected from a dead crow (TPM); 1 ex., Ditto, 23/vi/1981, K. Aida (TPM); 1 ex., Higashi-mine, Utsunomiya-shi, 13/viii/1979, M. Inaizumi (TPM); 2 exs., Miyuki, Utsunomiya-shi, 22/v/1976, 1/vi/1977, T. Kumazawa (TPM); 3 exs., Tsuruta-Numa, Utsunomiya-shi, 10-11/vi, 22-23/vii/1991, no collector's name (TPM); 12 exs., Akada, Nishi-Nasuno-machi, 22, 30/v/1990, 8/viii/1991, S. Ohmomo (TPM); 3 exs., Nogi-Jinja, Nishi-Nasuno-machi, 10/viii/1984, M. Takada, collected from a fungus, *Psathyrella candolleana* (TPM); 17 exs., Hikida, Kanuma-shi, 21/v, 16/vi/1984, M. Takaoka (TPM); 16 exs., Ditto, 1984, M. Takaoka (TPM); 2 exs., Moro-yama, Kanuma-shi, 12/v/1984, M. Takaoka, collected from a fungus, *Armillaria* sp. (TPM); 2 exs., Ditto, 12/v/1985, M. Takaoka, collected from a fungus, yeast plant on a tree, *Styrax japonica* (TPM); 16 exs., Takadate-yama, Mashiko-chô, 24/vii/1984, M. Takaoka, collected from a fungus, *Tylopilus reofelleus* (TPM); 1 ex., Kuriyama-mura, Shioya-gun, 27/v/1989, Omoda and Ôkawa (TPM); 1 ex., Yunishi-gawa, Kuriyama-mura, Shioya-gun, 15/vii/1980, S. Takahashi (TPM); 1 ex., Tashiro-yama, Kuriyama-mura, Shioya-gun, 25/viii/1990, K. Watanabe (TPM); 1 ex., Yokokawa, Fujiwara-machi, Shioya-gun, 23/vi/1985, K. Satoh (TPM); 1 ex., Ditto, 16/vi/1985, T. Miyamoto (TPM); 1 ex., Kokufu, Tochigi, 15/vii/1985, H. Yoshitomi (TPM); 3 exs., Azusa-machi, 30/vii/1988, H. Yoshitomi (TPM); 1 ex., Ôhira-yama, Tochigi, 2/vii/1989, H. Yoshitomi (TPM); 6 exs., Sôchi-Shikenjô, Nishi-Nasuno-chô, 22/v/1990, S. Ohmomo (TPM). Chiba-ken: 1 ex., Sarashina, Chiba-shi, 7/v/1987, J. Mochizuki. Tôkyô-to: 1 ex., Toshima-ku, 19/v/1963, S. Kondo; 2 exs., Aihara, 16/v/1987, H. Takizawa; 1 ex., Tôkyô, v/1913, F. Muir (BSM); 2 exs., Mt. Takao-san, 11/v/1957, Y. Kurosawa (NSMT); 1 ex., Ditto, 1/vi/1924, no collector's name (NSMT); 2 exs., Ditto, 21/vi/1963, S. Nomura (NSMT); 4 exs., Tôkyô, 13, 27/v, 13/vii/1914, E. Gallois; 1 ex., Kunitachi, 25/iv/1954, S. Nomura (NSMT); 3 exs., Kinuta, Setagaya, 16/vi/1987, 5/v/1980, 19/iv/1987, Y. Kurosawa (NSMT). Kanagawa-ken: 2 exs., Yokohama, vi/1923, J. F. Illingworth (BSM); 1 ex., Ditto, vi/1941, K. Sato; 30 exs., Akuwa-chô, Yokohama, 7/vi/1983, 25/v, 12/vi/1984, K. Wada; 1 ex., Mt. Ôyama, 5/v/1989, H. Takizawa; 3 exs., Fudakake, Tanzawa, 11/v/1980, H. Tanaka; 9 exs., Kurokawa-Eki, Tama-ku, Kawasaki, 26/v, 6/vi/1987, J. Mochizuki. Toyama-ken: 1 ex., Kanayama, Izumi, Toyama, 8/v/1983, K. Sakai. Yamanashi-ken: 1 ex., Mt. Daibosatsu, 12-13/viii/1969, H. Takizawa; 2 exs., Akeno, 25/viii/1985, N. Kobayashi (NSMT). Nagano-ken: 1 ex., Sugadaira, 24/vii/1978, T. Fujisawa (EIHU); 1 ex., Yatsu-ga-take, 4/x/1941, M. Hanano (NSMT); 1 ex., Mt. Nyûgasa, 3/viii/1960, S. Nomura; 1 ex., Shirahone Spa., 17/vii/1988, K. Tazoe. Shizuoka-ken: 1 ex., Hamaishi, 24/iv/1977, H. Takizawa; 2 exs., Amagi-san, Izu, 17/vii/1955, S. Tsuyuki (NSMT). Nara-ken: 5 exs., Hasedera, Sakurai-shi, 3/v/1985, T. Itô; 1 ex., Kôjin, Nosegawa, Yoshino, Nara, 13/vii/1985, T. Itô; 3 exs., Nara-kôen, Nara, 3/v/1987, K. Haga, collected from dead deer. Wakayama-ken: 3 exs., Ryûmon-yama, Kokawa, 21/iv/1985, T. Itô. Hyôgo-ken: 1 ex., Saijô, Himeji, 15/v/1991, Y. Kusui.

[Shikoku] Ehime-ken: 2 exs., Mt. Ishizuchi, 8/viii/1987, K. Matsuda.

[Kyûshû] Fukuoka-ken: 2 exs., Tachibana-yama, 17/vii/1988, S. Nomura. Saga-ken: 2 exs., Sashi, Karatsu, 16/vii/1950, T. Shibuya (NSMT). Kumamoto-ken: 3 exs., Ichifusa-yama, 1-2/viii/1988, S. Nomura; 107 exs., Kawaguchi, Sakamoto-mura, 15/vi/1985, T. Tanabe. Kagoshima-ken: 1 ex., Chiran, 13/viii/1963, Y. Kurosawa (NSMT); 1 ex., Ôdomari, Sata, Ôsumi-hantô, 2/v/1992, K. Haga. Tsushima Is.: 1 ex., Nita, Meboro, 9/vi/1968, Y. Kurosawa (NSMT).

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Tsushima Isles, Nansei Isles); Taiwan; Continental China; Korea; Khabarovskij and Primorskij Kray.

6. 3. 6. SUBFAMILY HETAERIINAE MARSEUL, 1857

GENUS HETAERIUS ERICHSON, 1834

Hetaerius Erichson, 1834: 156 [type species: *Hister quadratus* Kugelann, 1794: 519, designated by monotypy].

Haeterius (sic): Dejean, 1837: 143.

Key to the Japanese species of the genus *Hetaerius*

- 1(2) Body red or reddish brown. Pronotal lateral area without rugae. *H. gratus* Lewis, 1884
2(1) Body black. Pronotal lateral area densely with rugae. *H. optatus* Lewis, 1884

Hetaerius gratus Lewis, 1884

(Fig. 80A, B)

Hetaerius gratus Lewis, 1884: 137 [midway between Shimonosuwa and Wada-tôge]; Hasegawa and Kubota, 1944: 84 [Yokohama]; Tanoguchi and Koshio, 1979: 8; Kurosawa, 1976: 11; Hisamatsu, 1985b: 230.

Japanese name: Aka-arizuka-emma-mushi.

Description. Body oval, red brown, shining and furnished with yellow, long hairs on dorsal surface. Body length, PEL, 1.53 – 1.76 mm (1.67 ± 0.04 , $n=5$), PPL, 1.69 – 2.08 mm (1.91 ± 0.06 , $n=5$). Width, 1.41 – 1.53 mm (1.48 ± 0.02 , $n=5$). Biometric data are given in Table 16.

Frontal disk flat, feebly concave apically, evenly covered with punctures which are separated by about 3 (2 – 4) times their diameter. In femlae, the disk covered with setiferous punctures. Lateral margin strongly carinate from occiput to front margin of clypeus, the carinae feebly convergent forward before antennal sockets, thence strongly convergent apically, on clypeus nearly parallel and feebly arcuate inwardly, and separated on front. Labrum rectangular, its anterior margin cuspidate at middle. Mandible short and robust.

Pronotal sides (Fig. 80A, B) medially arcuate inwardly, convergent forward, furnished with long robust hairs, and feebly marginate and carinate laterally, the carinae running inwardly on basal 1/3; anterior angles rather broadly and obliquely truncate; anterior margin strongly emarginate, its marginal stria impressed at a little distance from the margin on each lateral 1/3. Pronotal lateral stria strongly elevated, complete laterally, reaching nearly to anterior margin and not crenate, behind anterior margin feebly impressed on lateral 1/3. Disk separated from lateral 1/5 by the pronotal lateral stria; lateral area convex, evenly covered with fine, punctures, which are separated by 4 times their diameter; a dark brown bulla present on basal 1/4 of the lateral area; median area convex medially, feebly depressed along the lateral stria, and sparsely covered with fine punctures which are separated by about 3 times their diameter. In female, the punctures setiferous, the setae rather long (Fig. 80B).

Epipleura feebly concave medially. Epipleural marginal stria impressed on median 1/3. Elytral marginal stria (Fig. 80A, B) complete and feebly carinate. External subhumeral stria strongly carinate, sinuate and complete, the apical end extending across elytral apex to medio-apical angles of elytra. Internal subhumeral stria carinate and abbreviated on apical 1/4. First – 2nd dorsal striae carinate and complete, apical end of the 1st continuing to the extended external subhumeral stria. Third dorsal elytral stria carinate and shortened on apical 1/4. Fourth, 5th and sutural striae absent. Surface of elytral disk evenly covered with fine punctures which are separated by about 3 times their diameter, except inside the dorsal striae narrowly. In female, the punctures long setiferous (Fig. 80B).

Propygidium broad, flat, sparsely and shallowly punctate on basal 1/3, the punctures united with each other to form rugae, and sparsely furnished with long hairs.

Pygidium sparsely, shallowly and finely punctate, the punctures being separated by about 3 times their diameter.

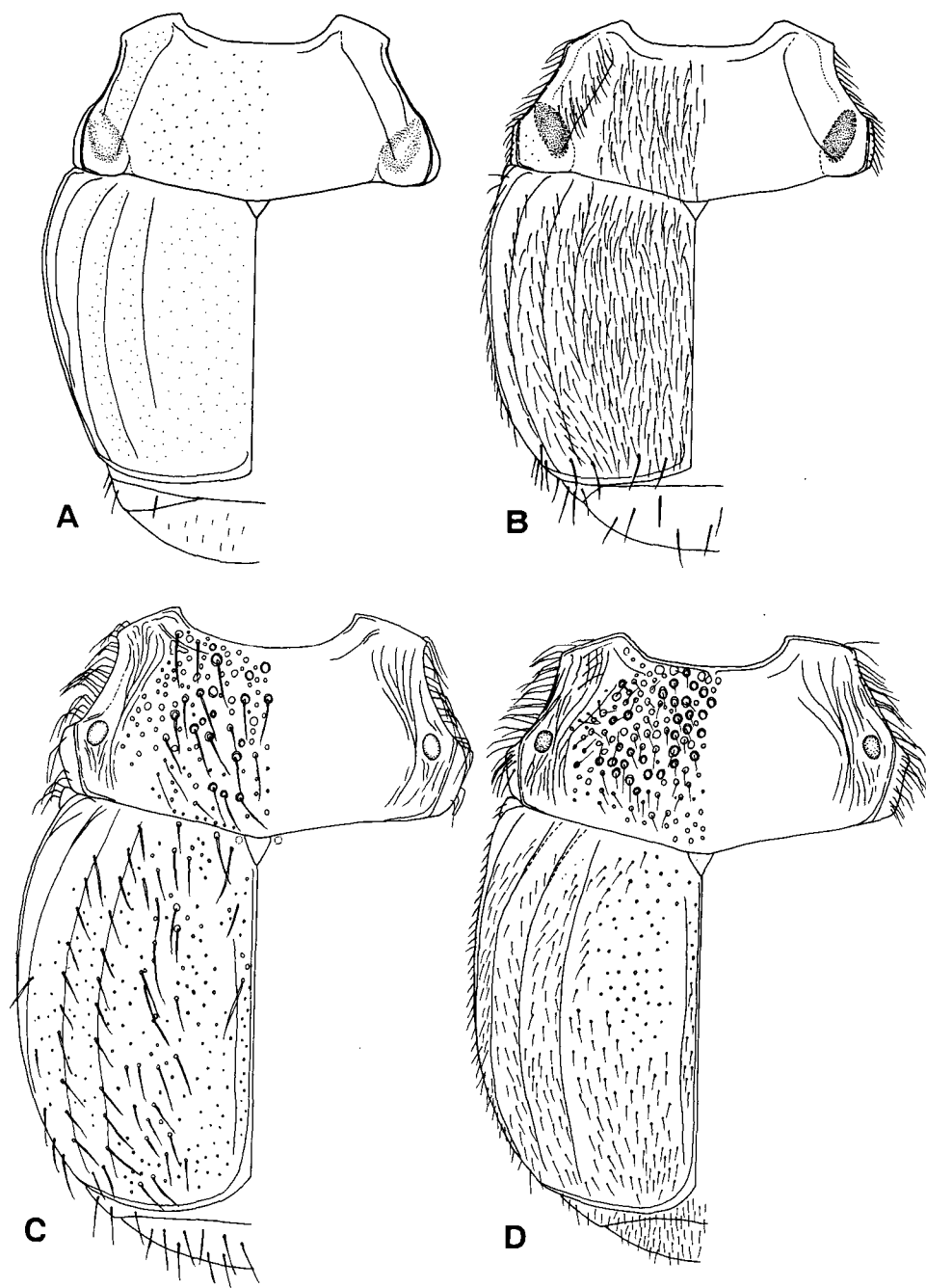


Fig. 80. *Hetaerius* spp. A: *H. gratus* Lewis, male. B: Ditto, female. C: *H. optatus* Lewis, male. D: Ditto, sex undetermined.

Anterior margin of pronotal lobe straight, its marginal stria complete; disk short, elevated, with a longitudinal impression. Suture between the lobe and the keel clearly impressed, but narrowly interrupted medially, each section of the suture united with apical end of the lateral prosternal stria. Prosternal keel convex medially; carinal striae convergent apically, joined in front and extending anteriorly as a carina; disk flat and sparsely and finely punctate; posterior margin broadly and roundly emarginate. Lateral marginal striae strongly carinate and convergent apically.

Anterior margin of mesosternum produced in front to fit prosternal emargination. Marginal stria absent. Disk elevated medially on basal 1/3 along the anterior margin, and with deep fovea laterally; surface microscopically and sparsely punctate. Intercoxal disk of metasternum convex medially, strongly depressed behind anterolateral angles, and its punctation similar to that of the mesosternum. Two lateral metasternal striae present on each side; the inner outwardly arcuate, carinate, the apical end reaching near the inner angle of the metacoxa; the outer sinuate, lightly carinate, and extending obliquely outwardly, the apical end reaching near the middle of basal margin of the metacoxa. Post-mesocoxal stria lightly carinate, extending posteriorly on basal 1/2, then strongly bent outwardly and reaching middle of the lateral disk. Lateral disk densely covered with transverse oblong and coarse punctures, which are often fused with each other.

Intercoxal disk of 1st abdominal sternum has punctation similar to that of the metasternum; 2 lateral striae present on each side, these striae sinuate, carinate and complete. Lateral disk coarsely punctate.

Protibia dilated, oblong and with 16 setae on outer margin. Mesotibia with 16 setae on outer margin. Metatibia with 8 setae on outer margin.

Specimens examined. [Hokkaidô] 2♂♂ 1♀, Okusawa, Otaru, 1, 2/viii/1993, M. Ôhara.

[Honshû] Kanagawa-ken: 1 ex., Kamiyama, Hakone, 9/v/1983, Y. Hirano (Hirano collection); 2 exs., Nishizawa, Tanzawa, 3/v/1983, Y. Hirano (Hirano collection); 1 ex., Shiozawa, Tanzawa, 9/v/1983, Y. Hirano (Hirano collection). Nagano-ken: 1 ex., Kiso-Ontake-san, Hinagura-Hongô-mura, 19/vi/1952, S. Uéno (NA); 1 ex., Nimeki-daira, 22/v/1983, Y. Hirano (Hirano collection).

Distribution. Japan (Hokkaidô, Honshû; Kyûshû). New to Hokkaidô.

Remarks. *Hetaerius gratus* resembles *H. optatus*; however, it is easily distinguished by the color and the smooth lateral pronotal sides.

Biology of this species has been noted and recorded by some workers, who recorded the following ants as hosts: *Formica exsecta fukaii* Wheeler (Tanoguchi & Koshio, 1979), *F. japonica* Motschulsky (Hasegawa & Kubota, 1944; Kurosawa, 1976), *F. sanguinea* Latreille and *F. sp.* (Hirano, 1984).

Hetaerius optatus Lewis, 1884
(Fig. 80C, D)

Hetaerius optatus Lewis, 1884: 137.

Japanese name: Kuro-arizuka-emma-mushi.

Description. Body oval, black, shining and sparsely furnished with long hairs on dorsal surface; legs, mouthparts, antennae, margins of pronotum and of elytra dark brown. Body length, PEL, 2.01 – 2.14 mm (2.09 ± 0.03 , n=3), PPL, 2.18 – 2.27 mm (2.22 ± 0.02 , n=3). Width, 1.57 – 1.64 mm (1.81 ± 0.02 , n=3). Biometric data are given in Table 16.

Frontal disk flat, densely and coarsely punctate, and sparsely furnished with long hairs; lateral margin strongly carinate from occiput to posterior angles of clypeus, the carinae nearly parallel before antennal socket, thence strongly convergent apically, absent on clypeus, their apical ends separated anteriorly. Labrum rectangular, its anterior margin broadly emarginate. Mandible short and robust.

Pronotal sides (Fig. 80C) inwardly arcuate medially, convergent forward, furnished with long and robust hairs and completely and lightly carinate, on basal 1/3 the carinae running inwardly; anterior angles rather broadly and obliquely truncate; anterior margin strongly emarginate. Pronotal lateral stria not clear, represented by several sinuated carinae on lateral 1/5; these carinae set close, variously fused and interrupted. A lightly impressed stria behind lateral 1/4 of the anterior emarginated portion. Disk sparsely furnished with long hairs, separated from lateral 1/5 by the lateral carinae; the lateral area convex, with various carinae, sparsely and coarsely punctate, and with a bulla on basal 1/3; the median area convex medially, depressed laterally, densely covered with large, ocelloid and setiferous punctures which are separated by about 2 (1 – 3) times the diameter and become denser anteriorly, the setae long and castaneous, and intermingled with coarse punctures.

Epipleura flat, not concave. Epipleural marginal stria slightly carinate on apical 1/2. Elytral marginal stria sinuate, slightly carinate and complete, the apical end extending across elytral apex to medio-apical angle of elytron and united with the apical end of the sutural stria. External subhumeral stria (Fig. 80C) sinuate basally, carinate slightly and complete. Internal subhumeral stria shortened on apical 1/4. First – 3rd dorsal elytral striae slightly carinate and complete. Fourth and 5th dorsal elytral striae absent. Sixth dorsal elytral stria shortened on basal 1/4 and not attaining to the posterior margin. Suture complete, close to the sutural margin. Surface of elytral disk covered with large, ocelloid and setiferous punctures which are separated by about 2.5 (1 – 5) times the diameter, the setae long and yellow, and intermingled with coarse and round punctures which are separated by about 2.5 (1 – 5) times the diameter.

Propygidium broad, convex, densely covered with variously sized, setiferous, round and shallow punctures. Pygidium sparsely covered with round, coarse and setiferous punctures which are separated by about 2.5 (1 – 4) times the diameter.

Anterior margin of prosternal lobe truncate, its marginal stria lightly carinate and interrupted medially; disk densely and coarsely punctate. Suture between the keel and the lobe clearly impressed. Prosternal keel flat; carinal striae present on basal 1/2, nearly parallel, strongly carinate and feebly sinuate; disk densely covered with coarse punctures; posterior margin broadly and roundly emarginate. Lateral marginal striae carinate and convergent basally.

Anterior margin of mesosternum feebly produced anteriorly to fit prosternal emargination. Marginal stria strongly carinate, a little distant from the margin; disk short, sparsely covered with shortly setiferous punctures and with a deep fovea laterally. Intercostal disk of metasternum convex medially, strongly depressed on anterolateral angles, and evenly covered with shortly setiferous punctures. Two lateral metasternal striae present, the inner strongly carinate, arcuate inwards and shortened on apical 1/5, the outer carinate, extending posteriorly outwardly and reaching near the middle of metasternal-metepisternal suture. Post-mesocoxal stria slightly carinate, extending posteriorly and outwardly and reaching near the middle of the lateral disk. Lateral disk densely covered with transverse, oblong, large and shallow punctures

Table 16. Biometric data of *Hetaerius gratus* Lewis and *H. optatus* Lewis

	<i>H. gratus</i>	<i>H. optatus</i>
APW	0.49-0.55 (0.52±0.01) 5	0.57-0.59 (0.57±0.01) 3
PPW	1.22-1.33 (1.27±0.02) 5	1.31-1.35 (1.33±0.01) 3
PL	0.55-0.63 (0.60±0.01) 5	0.70-0.76 (0.73±0.02) 3
EL	0.86-1.13 (0.99±0.04) 5	1.22-1.24 (1.23±0.01) 3
EW	1.14-1.53 (1.48±0.02) 5	1.57-1.64 (1.61±0.02) 3
ProW	0.71-0.82 (0.75±0.02) 5	0.87-0.92 (0.90±0.01) 3
ProL	0.42-0.47 (0.45±0.01) 5	0.52-0.57 (0.54±0.01) 3
PyL	0.43-0.67 (0.50±0.04) 5	0.55-0.63 (0.58±0.02) 3
PTL	0.51-0.59 (0.54±0.02) 5	0.65-0.70 (0.67±0.01) 3
MSTL	0.51-0.71 (0.63±0.03) 5	0.87 3
MITL	0.67-0.82 (0.72±0.02) 5	0.92-0.96 (0.94±0.01) 3

which are often fused with each other.

Intercoxal disk of 1st abdominal sternum has punctuation similar to that of the mesosternum; 2 lateral striae present on each side, strongly sinuate basally and complete. Lateral disk evenly covered with oblong, large and shallow punctures.

Protibia dilated, oblong and with 8 robust setae on outer margin. Mesotibia and metatibia furnished with long hairs on outer margin, their outer margin strongly arcuate outwardly.

Specimens examined. [Hokkaidô] 1 ex., Nopporo, 19/vi/1987, M. Ôhara; 1 ♂, Maruyama, Sapporo, 23/v/1951, T. Kumata (EIHU); 3 exs., Tôya-Naka-no-shima, Abuta, 12-29/vi, 28/vi-17/vii/1993, S. Hori (HOR).

[Honshû] Akita-ken: 1 ex., Chôkai-san, 30/v/1939, Suzuki (NA). Kanagawa-ken: 1 ex. Manazuru, 22/v/1955, M. Kubota, collected from the nest of *Aphenogaster famelica*. Nara-ken: 1 ♀, Muroo, 1/viii/1989, M. Mori.

Distribution. Japan (Hokkaidô, Honshû, Shikoku).

Remarks. *Hetaerius optatus* resembles *H. gratus*; but they can easily be distinguished by the color and the dense rugae on the lateral pronotal sides.

The specimen (Fig. 80D) from Manazuru, Kanagawa-ken differs from the other examined specimens in the dense short hairs and the absence of yellow and long hairs on the dorsal surface. The possibility can not be eliminated that it should be referred to an undescribed species. Further material is necessary for a precise comparison.

Little is known about the habitat of this species. Nishikawa (1987) noted that *H. optatus* was found in the nest of an ant, *Lasius fuliginosus* (Latreille).

6. 3. 7. SUBFAMILY DENDROPHILINAE REITTER, 1909

Key to the Japanese tribes of the subfamily Dendrophilinae

- 1(2) Outer margin of protibia thick, with 2 edges bearing short setae, without denticles and spinula. Groove between the edges inset with protarsus. Tribe Anapleini Olexa, 1982
- 2(1) Outer margin of protibia thin, single-edged, the edge usually with small denticles, and with a small or strong hooked spinula. Protarsus put on dorsal surface of protibia.
- 3(6) Epistoma narrow, its lateral margins weakly convergent apically. Front without stria. Body round or oval, and usually convex. Basal piece of male aedeagus usually short.
- 4(5) Elytral disk with normal dorsal striae, which are well developed and parallel. Spinula of protibia large. Tribe Dendrophilini Reitter, 1909
- 5(4) Elytral disk punctate, without dorsal stria except for vague rudiments, these usually present

- basally and oblique. Spinula of protibia small.
 Tribe Bacaniini Kryzhanovskij and Reichardt, 1976
 6(3) Epistoma broad, trapezoid; frontal stria well developed and completely impressed behind labrum
 (sometimes interrupted anteriorly, ex. *Eulomalus*). Body oblong-oval, sometimes oval, and
 moderately convex. Basal piece of male aedeagus long, usually 3 times as long as parameres.
 Tribe Paromalini Reitter, 1909

TRIBE DENDROPHILINI REITTER, 1909

GENUS DENDROPHILUS LEACH, 1817

Dendrophilus Leach, 1817: 77 [type species: *Hister punctatus* Herbst, 1792: 41, designated by monotypy].

SUBGENUS DENDROPHILUS LEACH, 1817

Dendrophilus (Dendrophilus) xavieri Marseul, 1873 (Fig. 81, 82, 83)

Dendrophilus xavieri Marseul, 1873: 221, 226 [Japan]; Jakobson, 1911: 647; Hinton, 1945: 317, 333 [genitalia]; Hisamatsu, 1985b: 224, pl. 40, no. 23.

Dendrophilus (Dendrophilus) xavieri: Kryzhanovskij and Reichardt, 1976: 256; Mazur, 1984: 115.

Dendrophilus californicus Ross, 1937: 68, synonymized by Hatch, 1962: 268.

Dendrophilus sextstriatus Hatch, 1938: 18, synonymized by Hinton, 1945: 334.

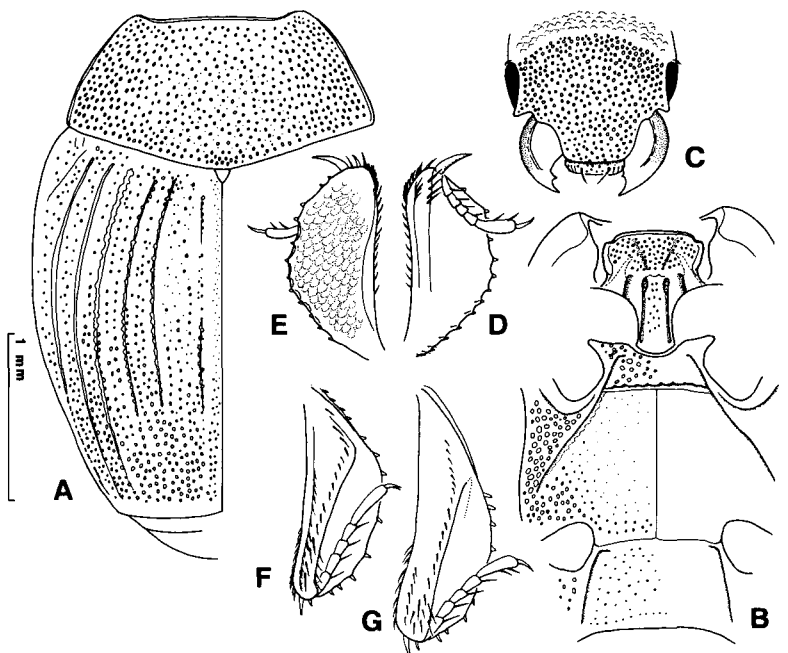


Fig. 81. *Dendrophilus xavieri* Marseul. A: Pronotum and left elytron. B: Prosternum and meso- and metasterna. C: Head. D: Protibia, dorsal view. E: Ditto, ventral view. F: Mesotibia, dorsal view. G: Metatibia, dorsal view.

Dendrophilus punctatus Ross, 1940: 107, synonymized by Hatch, 1962: 268.
Dendrophilus punctatus var. *sexstriatus*: Hatch and McGrath, 1941: 55.

Japanese name: Ô-mame-emma-mushi.

Description. Male and female. Body length, PPL, 2.78 – 3.30 mm (3.01 ± 0.03 , $n=20$), PEL, 2.62 – 2.98 mm (2.78 ± 0.03 , $n=20$). Width, 1.93 – 2.26 mm (2.09 ± 0.02 , $n=20$). Biometric data are given in Table 17. Body oblong, oval. Cuticle black and shining; tarsi and antennae dark rufopiceous.

Head (Fig. 81C) even, densely and coarsely punctate, the punctures being separated by about 1.5 (1 – 2) times the diameter; other punctures fine, intermingled with the coarse ones, sparser medially; frontal stria absent. Mandible short and stout; labrum with setiferous punctures.

Pronotal sides (Fig. 81A) strongly convergent forward; disk sparsely covered with coarse punctures which are separated by 2 – 5 times their diameter and become denser laterally, with fine punctures intermingled. Marginal pronotal stria complete and feebly crenulate.

Marginal epipleural stria complete, strongly carinate, and feebly sinuate on apical 1/2. Marginal elytral stria deeply impressed and complete. Epipleura densely covered with coarse punctures which become sparser and finer on the inner 1/2. Disk of elytra densely covered with coarse punctures on apical 1/2, which are separated by about their own diameter and often united with each other to form rugae on the apical 1/3; on basal 1/2, interstices among dorsal striae sparsely covered with moderate or fine punctures, which are irregularly separated by about 2.5 (1 – 5) times the diameter; extreme apical band impunctate. Subhumeral stria absent, but sometimes present on median 1/3. Oblique humeral stria indistinctly present on basal 1/3. First dorsal stria nearly complete and deeply impressed, but its apical 1/3 obsolete. Second and 5th dorsal striae present on basal 2/3, sometimes nearly complete. Third and 4th dorsal striae present on basal 1/2. These dorsal striae strongly impressed and crenate basally and progressively obsolete apically. Sutural stria present on basal 2/3 but its basal 1/3 indistinctly impressed, and its median 1/3 crenated.

Propygidium short, with 2 or 3 transverse rows consisting of coarse punctures along posterior margin. Pygidium densely covered with coarse and ocelloid punctures which are separated by 0.5 – 1 times the diameter.

Anterior margin of prosternal lobe (Fig. 81B) round and shortly marginate on median portion; sides marginate completely; disk of lobe densely and coarsely punctate. Prosternal process somewhat sparsely punctate. Carinal striae complete, strongly carinate and not united with each other at their posterior terminal ends. Descending lateral stria complete and carinate.

Anterior margin of mesosternum deeply emarginate in median portion. Mesosternum short, sparsely covered with coarse punctures, which are separated by about their own diameter, and strongly marginate laterally. Meso-metasternal suture indistinctly impressed and complete, and distantly with a strongly crenated stria on mesosternum. Intercostal disk of metasternum even, and sparsely and finely punctate, the punctures coarse along lateral metasternal stria and along posterior margin. Lateral disk of metasternum densely covered with large and shallow punctures. Mesocoxal stria complete along mesocoxa. Lateral metasternal stria carinate and extending posteriorly and obliquely, its apical end reaching about 1/2 to apical 1/3 of metasternal-

metepisternal suture.

Intercoxal disk of 1st abdominal sternum completely striate on each side, and sparsely and coarsely punctate laterally.

Protibia (Fig. 81E, D) dilated, with 12 denticles on outer margin.

Male genitalia as shown in Fig. 82.

Specimens examined. [Hokkaidô] 1 ex., Teshio, 18/vii/1969, no collector's name; 11 exs., Otaru, iv/1985, Y. Kusui; 1 ex., Tokiwa, Sapporo, 10/vii/1985, M. Ôhara; 2 exs., Bibi, 28/vi/1987, M. Ôhara.

[Honshû] Miyagi-ken: 1 ex., Oshiro-yama, Sendai, 27/iv/1953, K. Nagayama. Yamagata-ken: 1 ex., Yubama-Onsen, 26/vii/1951, K. Nagayama (NSMT). Fukushima-ken: 1 ex., Moriai, Fukushima-shi, 1/vii/1960, K. Tazoe. Tôkyô-to: 3 exs., Setagaya, 18/ix/1949, Ôhira (NA). Kanagawa-ken: 1 ex., Hatano, 7/viii/1972, H. Takizawa; 1 ex., Yokohama, 1/vi/1941, K. Satô (NSMT). Nagano-ken: 1 ex., Kiso-Koma-Kôgen, 13/vi/1993, K. Tazoe (Tazoe coll.). Wakayama-ken: 1 ex., Igumbashi, Kinokawa,

Table 17. Biometric data of *Dendrophilus xavieri* Marseul.

APW	0.75-0.92	(0.83± 0.01)	20
PPW	1.54-1.80	(1.66± 0.02)	20
PL	0.75-0.92	(0.83± 0.01)	20
EL	1.80-2.09	(1.95± 0.02)	20
EW	1.93-2.26	(2.09± 0.02)	20
ProW	1.05-1.24	(1.14± 0.01)	20
ProL	0.16-0.23	(0.20±0.005)	20
PyL	0.72-0.92	(0.83± 0.01)	20
PTL	0.62-0.75	(0.70± 0.01)	20
MSTL	0.65-0.85	(0.77± 0.01)	20
MTTL	0.82-0.98	(0.90± 0.01)	20

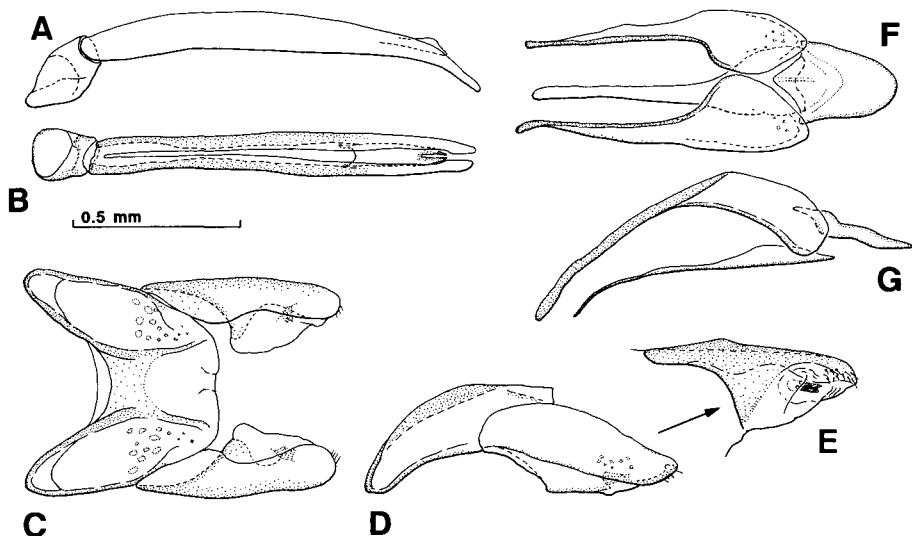


Fig. 82. *Dendrophilus xavieri* Marseul. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Apex of 8th sternum, ventral view. F: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. G: Ditto, lateral view.



Fig. 83. Collection sites of *Dendrophilus xavieri* Marseul in Japan.

7/xi/1953, K. K. (NA). Hyôgo-ken: 1 ex., Goten-yama, Takarazuka, 25/ix/1948, M. Gotô (NA). Okayama-ken: 1 ex., Saeki, 22/vi/1949, K. Kurosa (NA).

[Shikoku] Kagawa-ken: 2 exs., Toyonaka-chô, Sampô-gun, 4/v/1980, S. Ohmomo (NSMT).

[Kyûshû] Fukuoka-ken: 1 ex., Mt. Adachi, 5/iii/1963, S. Nakao (NA). Nagasaki-ken: 1 ex., Shimabara, 18-19/iv/1952, K. Oyama (NA); 22 exs., Kôno-ura, Hirado-shi, 16/ix/1979, A. Oda. Miyazaki-ken: 2 exs., Miyazaki, 13/x/?, no collector's name. Kagoshima-ken: 1 ex., Kurino, Kirishima, 23/vi/1985, H. Daidô; 1 ex., Takachiho-gawara, Kirishima, 11/iii/1980, T. Kinoda.

Distribution (Fig. 83). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Izu Isles); Taiwan; East Siberia; introduced to England and North America (British Colombia, Washington, Oregon).

Remarks. *Dendrophilus xavieri* superficially resembles *Gnathoncus* spp.; however, it can easily be distinguished by the presence of the prosternal lobe. This species is well characterized among the Japanese histerids.

Dendrophilus xavieri occurs in many kinds of rotting organic matter, such as compost piles, hen and pig manure, carrion, etc., and also found in nests of ants and birds. Hinton (1945) recorded the species on pumice in warehouse and in rotting grain in the basement of a flour-mill. Hisamatsu (1985b) recorded it from a nest of rats.

TRIBE ANAPLEINI OLEXA, 1982

GENUS ANAPLEUS HORN, 1873

Anapleus Horn, 1873: 311 [type species: *Bacanius marginatus* J. L. LeConte, 1853: 292, designated by monotypy]; Bickhardt, 1913: 175; 1916-17: 63, 73; Reichardt, 1941: 84, 126; Arnett, 1962: 375, 380; Kryzhanovskij and Reichardt, 1976: 260; Mazur, 1984: 116.

Sphaeroderma J. L. LeConte, 1861: 76, nec Stephens, 1831: 328, synonymized by Mazur, 1984: 116 [type species: *Bacanius marginatus* J. L. LeConte, 1853: 292].

Abraeodes Reitter, 1886: 272, synonymized by Bickhardt, 1913: 175 [type species: *Abraeus raddei* Reitter, 1877: 292]; Jakobson, 1911: 642, 653.

Tadzhister Kryzhanovskij, 1966: 55, synonymized by Kryzhanovskij and Reichardt, 1976: 260 [type species: *Tadzhister gracilipes* Kryzhanovskij, 1966: 55].

Diagnosis. Body small, about 2.5 mm long; oval, convex, usually dark brown or black; tibiae, tarsi, antennae and mouthparts rufopiceous. Frontal stria of head absent;

surface obliquely convex in front of eyes and feebly depressed on longitudinal median line. Labrum transverse, with a pair (or more) of setiferous punctures. Mandibles short and stout. Antennae long; scape oblong and stout; pedicel somewhat long and stout; club consisting of apical 3 flagella, of which the sutures are distinct. Pronotum transverse, its sides usually strongly convergent apically; lateral and anterior margin narrowly marginate; apical angles acute and strongly depressed. Elytra usually coarsely punctate, sometimes strigate apically; dorsal stria absent; apex of elytra truncate.

Propygidium transverse and nearly vertical. Pygidium curved downwards. Prosternal lobe quadrate and broad; suture between lobe and process indistinct; antennal cavity longitudinal, deep and situated along prosternal lobe and process; carinal striae deeply impressed. Mesosternum short and transverse. Meso-metasternal suture distinct and crenate. Metasternum coarsely and densely punctate. Protibia narrow, dilated medially, without large denticles, usually dentate-serrate with very small denticles. Meso- and metatibiae narrow and long.

Key to the Japanese species of the genus *Anapleus*

- 1(2) Pygidium with a depressed area near tip. *A. hagai* M. Ôhara, sp. nov.
- 2(1) Pygidium without depressed area.
- 3(4) Punctuation of elytra dense; on humeral area of elytra, the punctures being separated by 0.3 times their diameter. *A. semen* (Lewis, 1884)
- 4(3) Punctuation of elytra sparse; on humeral area of elytra, the punctures being separated by 1 – 2 times the diameter.
- 5(6) Punctuation of metasternum with uniform punctures. *A. nakanei* M. Ôhara, sp. nov.
- 6(5) Punctuation of metasternum with large and fine punctures. *A. nomurai* M. Ôhara, sp. nov.

Anapleus semen (Lewis, 1884)

(Fig. 84, 85, 86, 87)

Triballus semen Lewis, 1884: 137 [Japan: Honshû].

Anapleus semen: Nakane, 1963: 68; Mazur, 1984: 117.

Anapleus japonicus Nakane, 1961: 4 [Rausu, Hokkaidô]; Kryzhanovskij and Reichardt, 1976: 262; Olexa, 1982: 44.

Japanese name: Tsubu-emma-mushi.

Description. Body oval, moderately convex, black and shining; tarsi and antennae rufopiceous. Body length, PPL, 2.05 – 2.23 mm (2.14 ± 0.03 , n=5), PEL, 1.95 – 2.11 mm (2.03 ± 0.03 , n=5). Width, 1.46 – 1.85 mm (1.67 ± 0.05 , n=6). Biometric data are given in Table 18.

Head (Fig. 85C) densely, coarsely and deeply punctate. Epistoma convex. Front depressed between eyes, without stria.

Pronotal sides (Fig. 85A) strongly convergent apically. Disk of pronotum densely covered with punctures, which are as large as those of head and are separated by 0.75 (0.5 – 1) times the diameter, and with a shallow depression behind each eye. Marginal stria strongly carinate and complete, the anterior portion densely crenate.

Epipleural marginal stria complete and densely crenate. Elytral marginal stria somewhat carinate, complete and sparsely crenate, its apical end extending along the apex of elytra and attaining to near the suture. There is a narrow impunctate band outside the epipleural marginal stria. Area between epipleural and elytral marginal striae

with 2 or 3 rows of coarse punctures. Lateral sides of elytra elevated. Surface of elytra (Fig. 86A, B) densely covered with coarse punctures, which are a little larger than those of the pronotum and are separated by 0.3 – 0.5 times their diameter; fine punctures narrowly along suture; basal 1/2 of elytra densely with longitudinal rugae; extreme apex impunctate. Dorsal stria absent.

Propygidium densely covered with somewhat deep punctures, which are a little finer than the elytral ones and separated by about 1/2 their diameter. Pygidium (Fig. 86D) sparsely punctate, the punctures being separated by their own diameter and as large as those of propygidium.

Anterior margin of prosternal lobe (Fig. 86C) straight medially and slightly marginate and carinate; sides strongly carinate and marginate; posterior angles deeply excavate, the excavations are situated just before ends of carinal striae of prosternal process. Disks of the lobe and process densely covered with coarse, deep punctures and sometimes intermingled with ocelloid ones, these coarse punctures being separated by about 1/2 their diameter and becoming sparser on a narrow basal band. Carinal striae completely impressed.

Anterior margin of mesosternum (Fig. 86C) nearly straight; disk of mesosternum short (width : length = 4 : 1), and coarsely and sparsely covered with ocelloid and shallow punctures, which become finer medially; lateral side completely marginate. Meso-metasternal suture complete and strongly carinate. Mesosternum feebly convex on median area, and covered with deep, round and large punctures, which are separated by about 1/2 their diameter, the punctures becoming sparser on median area. Lateral metasternal stria extending obliquely and posteriorly, reaching near middle of metasternal-metepisternal suture. Intercostal disk of 1st abdominal sternum densely covered with punctures, which are a little finer than those of the metasternum,

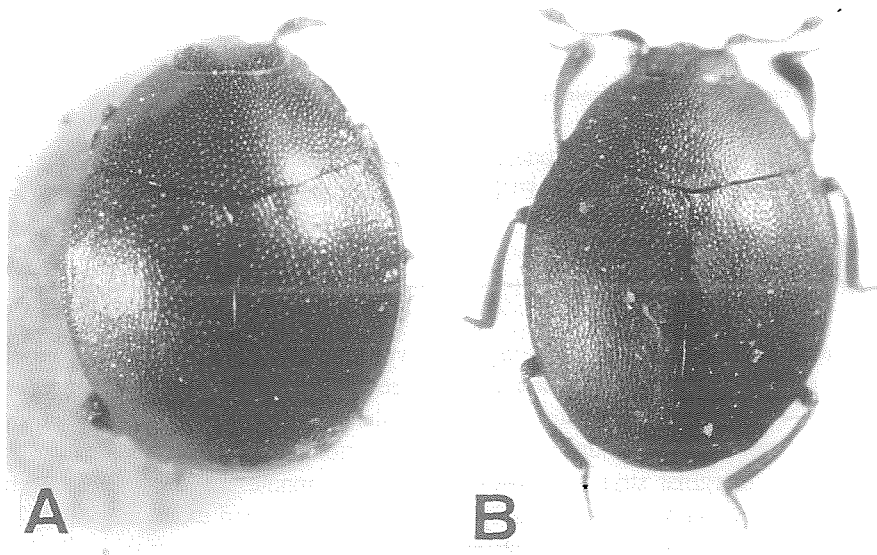


Fig. 84. A: *Anapleus semen* (Lewis), Holotype. B: *Anapleus japonicus* Nakane, Holotype (NA).

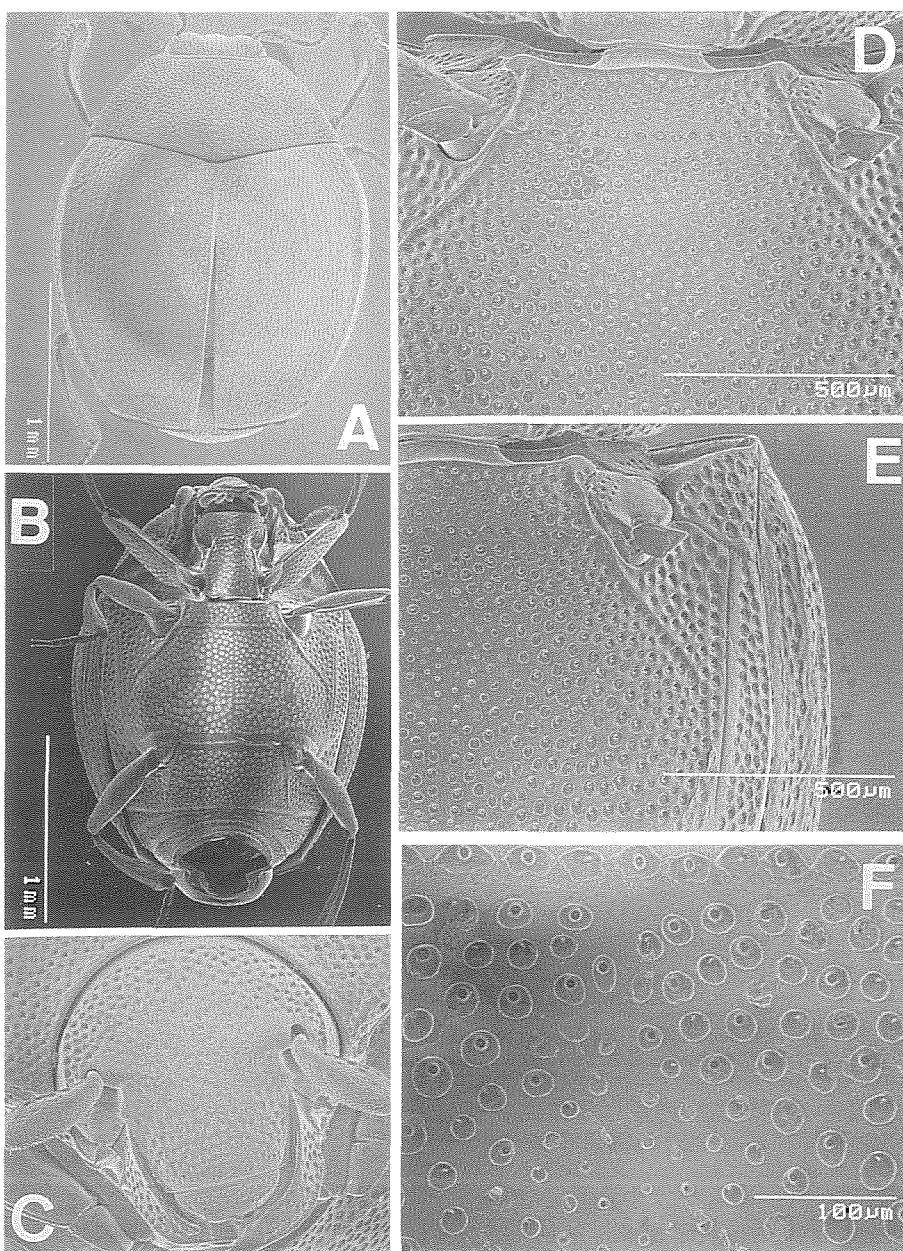


Fig. 85. *Anapleus semen* (Lewis), adult. A: Dorsal view. B: Ventral view. C: Head, frontal view. D: Meso- and metasterna. E: Lateral side of metastenum. F: Punctuation of middle area of intercoxal disk of metasternum.

Table 18. Biometric data for *Anapleus semen* Lewis

	Holotype	Holotype of <i>A. japonicus</i>	male and female
APW	0.43	0.63	0.43-0.63 (0.58±0.03) 6
PPW	1.14	1.40	1.14-1.42 (1.33±0.04) 6
PL	0.51	0.59	0.51-0.67 (0.59±0.02) 6
EL	1.26	1.48	1.26-1.48 (1.40±0.03) 6
EW	1.46	1.69	1.46-1.85 (1.67±0.05) 6
ProW	0.67	0.79	0.67-0.79 (0.75±0.02) 6
ProL	0.20	0.22	0.20-0.28 (0.23±0.01) 6
PyL		0.45	0.39-0.45 (0.42±0.01) 5
PTL		0.61	0.53-0.67 (0.61±0.02) 5
MSTL		0.69	0.59-0.69 (0.63±0.02) 5
MTTL		0.75	0.65-0.75 (0.70±0.02) 5

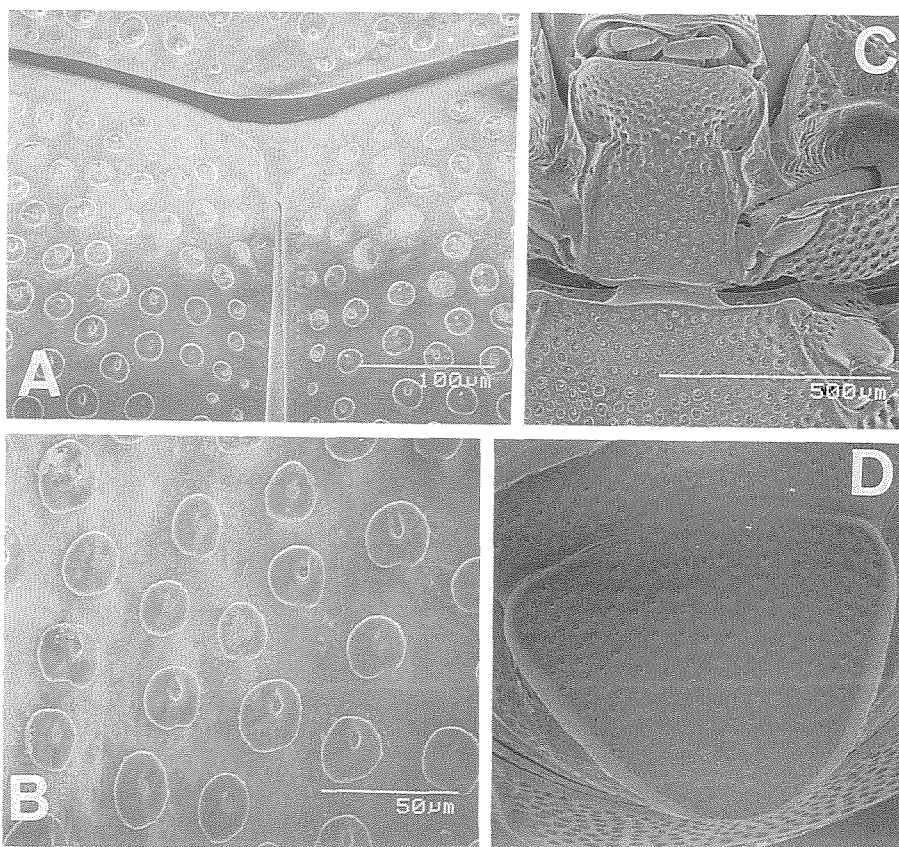


Fig. 86. *Anapleus semen* (Lewis), adult. A: Elytra around scutellum, dorsal view. B: Punctuation of medio-basal area of elytron. C: Prosternum, ventral view. D: Pygidium.

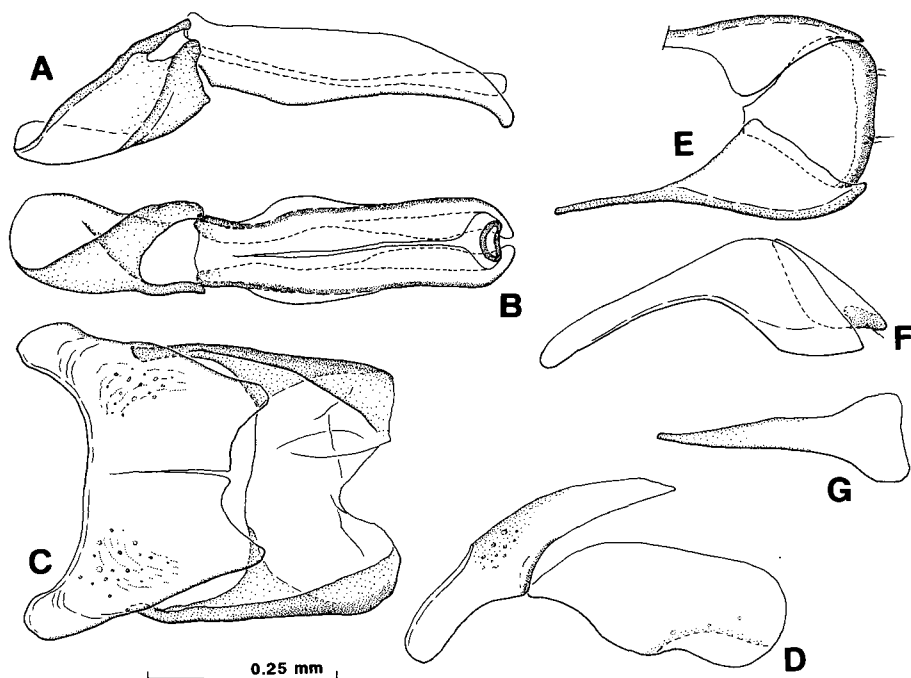


Fig. 87. *Anapleus semen* (Lewis). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

longitudinal oblong, separated by 0.3 times their diameter laterally, and become finer and sparser on the median area; its sides completely striate and strongly carinate.

Protibia dilated, its outer margin angulate about middle.

Male genitalia as shown in Fig. 87.

Specimens examined. Holotype of *Triballus semen* Lewis, 1884, labelled "Type", "Miyanoshita, Japan, 1880" and "*Triballus semen* Lewis" (The Natural History Museum, London). Holotype of *Anapleus japonicus* Nakane, labelled "Holotype", "Rausu, Shiretoko (Hokkaidô) 8/vii/1958, T. Nakane." and "*Anapleus japonicus*, Det. T. Nakane, 1961" (NA).

[Hokkaidô] 1♂ 1♀, Hôheikyô, Jôzankei, 16/vii/1988, M. Ôhara.

[Honshû] Tochigi-ken: 1 ex., Nikkô, 11-13/vi/1967, H. Takizawa. Tôkyô-to: 1 ex., Takao-san, 27/vi/1970, H. Takizawa.

Distribution. Japan (Hokkaidô, Honshû).

Remarks. *Anapleus semen* is a relatively large species; it is similar to *A. nakanei* and *A. nomurai*; however, the rather larger body and the dense punctuation on the elytra will distinguish it from them.

This species is found on logs.

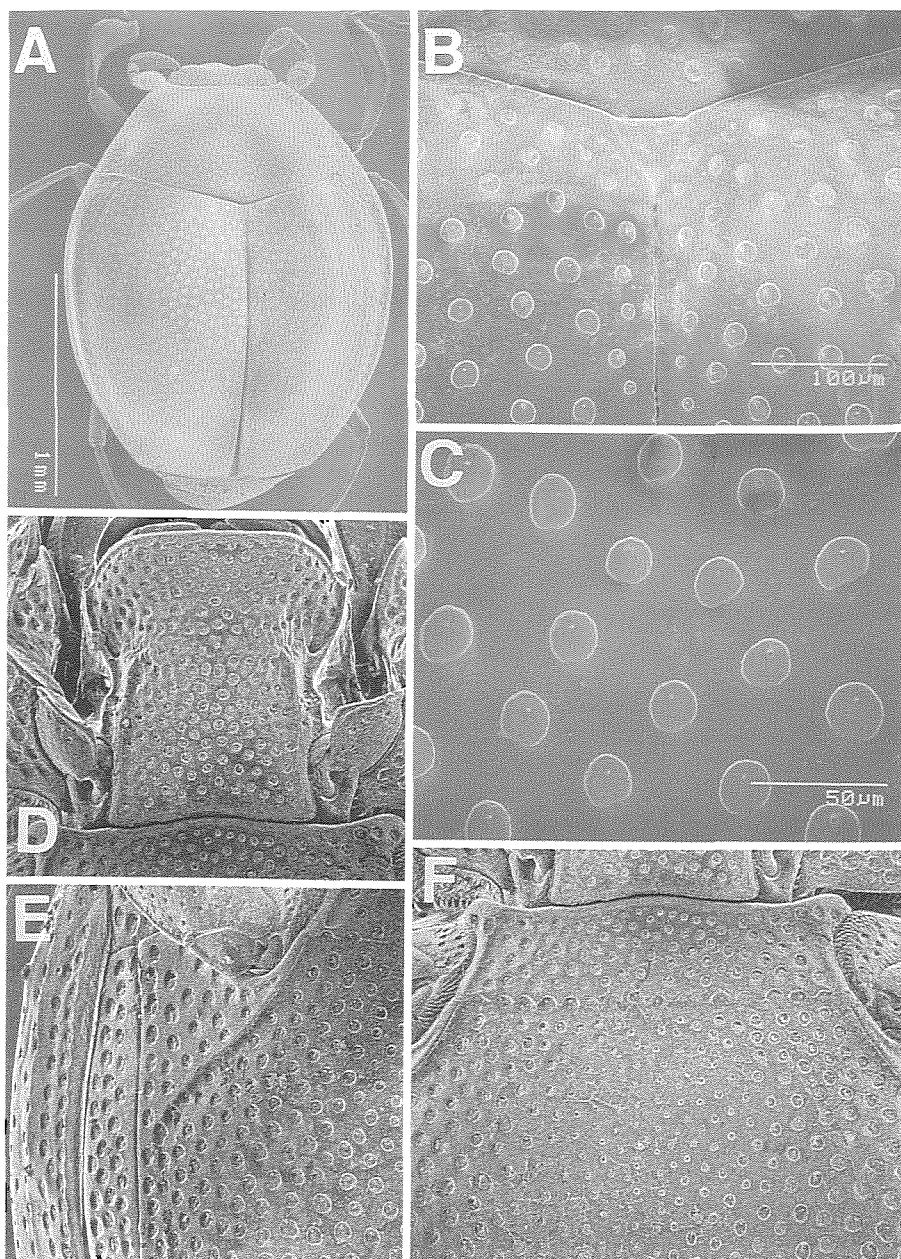


Fig. 88. *Anapleus nakanei* M. Ôhara, sp. nov., adult. A: Dorsal view. B: Elytra around scutellum. C: Punctuation of medio-basal area of elytron. D: Prosternum, ventral view. E: Lateral side of metasternum. F: Meso- and metasterna, ventral view.

Table 19. Biometric data of *Anapleus nakanei* M. Ôhara and *A. nomurai* M. Ôhara.

	<i>A. nakanei</i>	<i>A. nomurai</i>
APW	0.49-0.57 (0.54±0.01) 6	0.53-0.59 (0.56±0.02) 2
PPW	1.14-1.26 (1.20±0.02) 6	1.18-1.28 (1.23±0.03) 2
PL	0.45-0.55 (0.51±0.01) 6	0.57-0.61 (0.59±0.01) 2
EL	1.18-1.32 (1.24±0.02) 6	1.22-1.26 (1.24±0.01) 2
EW	1.42-1.52 (1.46±0.02) 6	1.44-1.56 (1.50±0.04) 2
ProW	0.61-0.71 (0.65±0.01) 6	0.67-0.71 (0.69±0.01) 2
ProL	0.18-0.22 (0.20±0.01) 6	0.24 (0.24) 2
PyL	0.33-0.39 (0.38±0.01) 6	0.33-0.35 (0.34±0.01) 2
PTL	0.55-0.59 (0.56±0.01) 6	0.51-0.55 (0.53±0.01) 2
MSTL	0.53-0.57 (0.56±0.01) 6	0.51 (0.51) 2
MITL	0.59-0.67 (0.62±0.01) 6	0.51-0.59 (0.55±0.03) 2

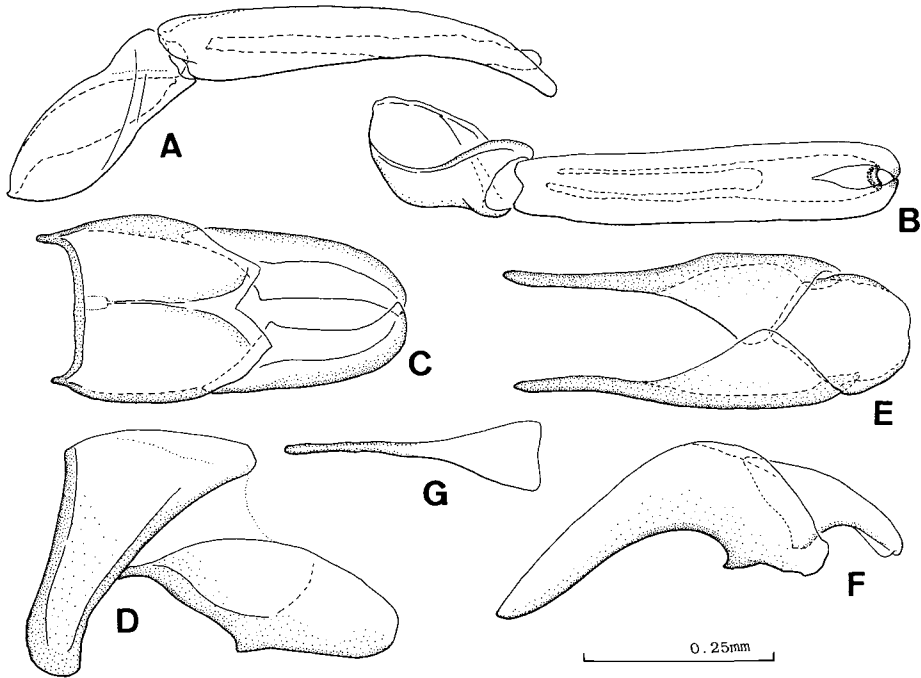


Fig. 89. *Anapleus nakanei* M. Ôhara, sp. nov. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

Anapleus nakanei M. Ôhara, sp. nov.
(Fig. 88, 89)

Japanese name: Nara-tsubu-emma-mushi.

Description. Male and female. Body weakly convex, oval, dark brown and shining; tarsi and antennae light brown. Body length, PPL, 1.89 – 2.07 mm (1.99 ±

0.03, n=6), PEL, 1.73 – 1.87 mm (1.81 ± 0.02 , n=6). Width, 1.42 – 1.52 mm (1.46 ± 0.02 , n=6). Biometric data are given in Table 19.

Head densely and deeply punctate. Epistoma convex. Front feebly depressed between eyes, without stria.

Pronotum (Fig. 88A) strongly convergent apically on sides. Disk sparsely covered with moderate and shallow punctures, which are separated by about 1.5 (1 – 2) times the diameter, the punctures becoming denser on lateral sides where they are separated by 0.75 times the diameter, and with a shallow depression behind each eye. Marginal stria weakly crenate and complete.

Epipleural marginal stria complete with dense punctures. Elytral marginal stria entirely and deeply impressed, and separately punctate. Impunctate narrowly along epipleural marginal stria. Area between epipleural and elytral marginal striae with 1 or 2 rows of moderate punctures. Lateral side of elytron feebly elevated, and with 2 rows of sparse and moderate punctures. Surface of elytra (Fig. 88B, C) sparsely and coarsely

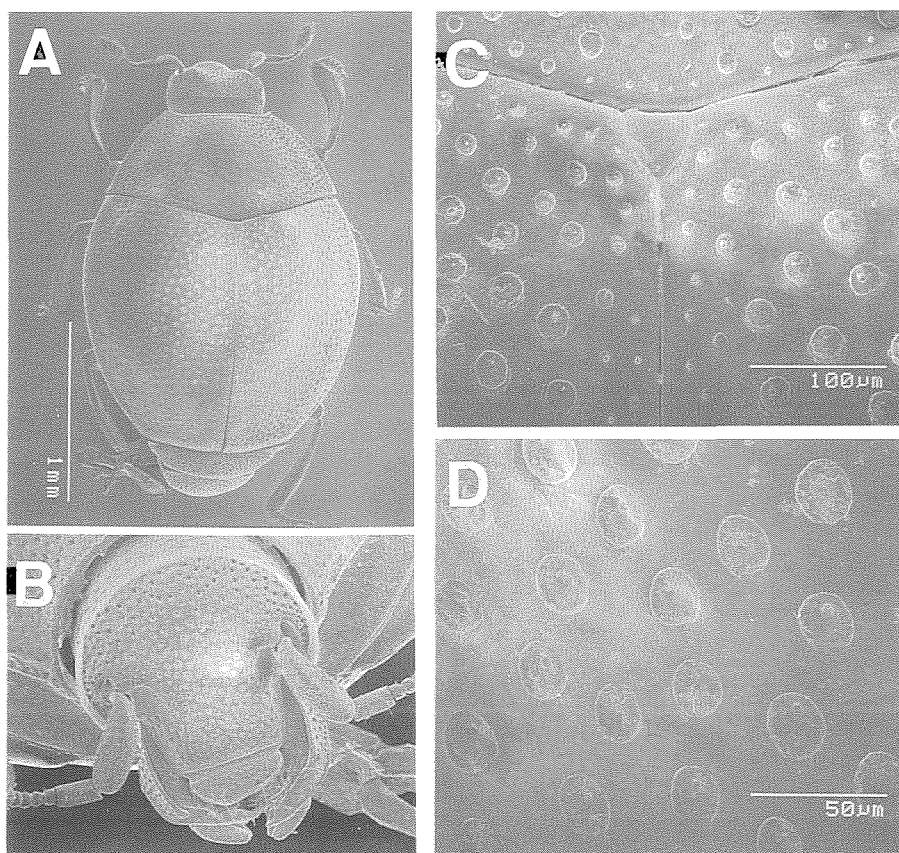


Fig. 90. *Anapleus nomurai* M. Ôhara, sp. nov., adult. A: Dorsal view. B: Head, frontal view. C: Elytra around scutellum. D: Punctation of medio-basal area of elytra.

punctate, the punctures a little coarser than those of the pronotum, shallow and separated by about 1.5 (1 – 2) times the diameter; impunctate narrowly on basal 1/2 near lateral 1/3 – 1/2 of elytron, the impunctate area slightly striate; finely punctate in a narrow band along suture; apical 1/4 of elytra densely covered with shallow rugae; extreme apex impunctate. Oblique humeral stria present on basal 1/3. All dorsal striae obsolescent, but the 1st (or 2nd) stria entirely and feebly impressed, and the 2nd (or 3rd) indistinctly on basal 1/2.

Propygidium densely covered with coarse and deep punctures, which are separated by 1/2 their diameter. Pygidium coarsely and sparsely punctate, the punctures being separated by about 1.5 (1 – 2) times the diameter, but becoming denser apically.

Anterior margin of prosternal lobe (Fig. 88D) straight and indistinctly margined. Disk of lobe densely covered with coarse punctures. Prosternal process nearly quadrate, its disk slightly convex, densely covered with coarse punctures except on a band along basal margin, and with complete carinal striae.

Anterior margin of mesosternum nearly straight (Fig. 88F). Mesosternum short (width : length = 16 : 5), densely and coarsely punctate. Lateral side of mesosternum (Fig. 88E) deeply marginate. Meso-metasternal suture with strongly crenate stria. Disk of metasternum convex medially, and coarsely with shallow punctures, which are separated by 0.5 – 1 times the diameter, the punctures becoming finer on median area. Lateral metasternal stria carinate, extending obliquely and posteriorly, reaching near middle of metasternal-metepisternal suture.

Intercostal disk of 1st abdominal sternum completely striate on each side, and finely and densely punctate, the punctures becoming coarser towards lateral and anterior margins.

Protibia dilated, its outer margin arcuate.

Male genitalia as shown in Fig. 89.

Specimens examined. Holotype, ♂, Yoshino-yama, Nara-ken, Honshû, Japan, 27/v/1985, S. Nomura (EIHU).

Paratypes. [Honshû] Fukushima-ken: 2 exs., Kaimon-rindô, Towada, Kami-Ogawa, Ogawa-machi, Iwaki-shi, 19/vii/1993, A. Matsushima (1 ex., in Matsushima Collection). Nara-ken: 2 ♂♂, Yoshino-yama, 27/v/1985, S. Nomura. Kyôto-fu: 1 ♂, Kurama, 17/vi/1954, T. Nakane (NA); 1 ♀, Kunogahata, 8/vi/1954, T. Nakane (NA). [Kyûshû] Fukuoka-ken: 1 ♂, Mt. Shôji, 28/iv/1964, S. Nakano (NA). Ôita-ken: 1 ex., Saeki, no date, K. Kurosa (NA).

Distribution. Japan (Honshû, Kyûshû).

Remarks. *Anapleus nakanei* is very similar to *A. nomurai*, but differs from the latter by the punctuation of the pronotum, elytra and meso- and metasterna (see the description of *A. nomurai*).

Anapleus nomurai M. Ôhara, sp. nov.
(Fig. 90, 91)

Japanese name: Okayama-tsubu-emma-mushi.

Almost agrees with *Anapleus nakanei*, but differs by the following characters: punctuation on pronotum and elytra deeper (Fig. 90C, D) than in *nakanei*; lateral sides of elytra not elevated; punctuation of intercostal disk of meso- and metasternal and 1st abdominal sternum sparse, coarse and very deep, with fine punctures intermingled (Fig. 91B, C).

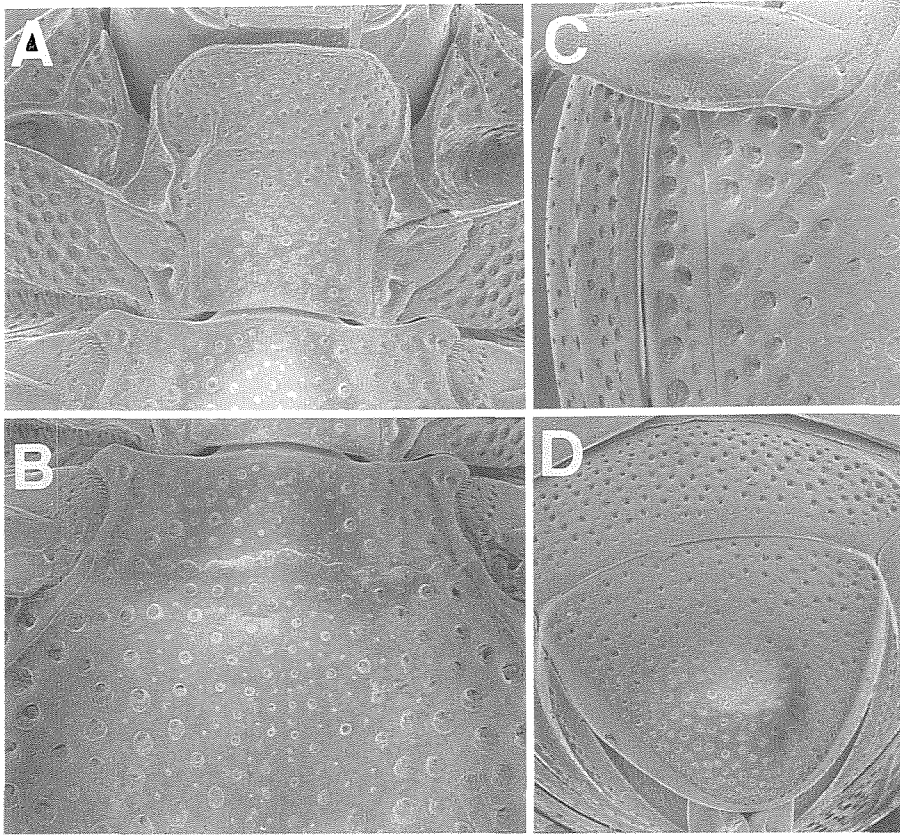


Fig. 91. *Anapleus nomurai* M. Ôhara, sp. nov. A: Prosternum, ventral view. B: Meso- and metasterna. C: Lateral side of metasternum. D: Propygidium and pygidium, caudal view.

Body length, PPL, 2.09 – 2.13 mm (2.11 ± 0.01 , $n=2$), PEL, 1.89 – 12.93 mm (1.91 ± 0.01 , $n=2$). Width, 1.44 – 1.56 mm (1.50 ± 0.04 , $n=2$). Biometric data are given in Table 19.

Specimens examined. Holotype, ♀, Yoshino-yama, Nara-ken, Honshû, Japan, 27/v/1985, S. Nomura (EIHU).

Paratype. [Okayama-ken] ♀, Ikura-nimi-shi, 21/v/1985, S. Nomura.

Distribution. Japan (Honshû).

Remarks. This species is strikingly similar to *A. nakanei*, but can be distinguished easily by having 2 kinds of punctures on the meso- and metasterna.

This species seems to live in litter.

Anapleus hagai M. Ôhara, sp. nov.

(Fig. 92, 93, 94)

Japanese name: Ô-tsubu-emma-mushi.

Description. Female. Body oval, convex, black and shining; tarsi, tarsus and antennae light brown. Body length, PPL, 2.45 – 2.84 mm (2.65 ± 0.07 , $n=4$), PEL, 2.29 – 2.62 mm (2.49 ± 0.06 , $n=4$). Width, 1.96 – 2.09 mm (2.03 ± 0.02 , $n=4$). Biometric data are given in Table 20.

Head (Fig. 92B) densely and coarsely punctate. Epistoma convex. Front depressed between eyes, without striae.

Pronotum strongly convergent anteriorly on sides. Disk densely covered with coarse and deep punctures, which are separated by about 0.3 times their diameter. Marginal stria weakly carinate and complete.

Epipleural marginal stria complete and strongly crenate. Elytral marginal stria carinate, complete and crenate. Impunctate narrowly along epipleural marginal stria. Area between these striae with 2 or 3 rows of coarse and dense punctures. Surface of elytra (Fig. 92C, D) sparsely covered with large, shallow, and ocelloid punctures, which are separated by about 1.5 (1 – 2) times the diameter medially, the punctures becoming denser and a little finer laterally; dense fine punctures narrowly along the sutural line; apical 1/5 of elytra with shallow longitudinal rugae; extreme apex

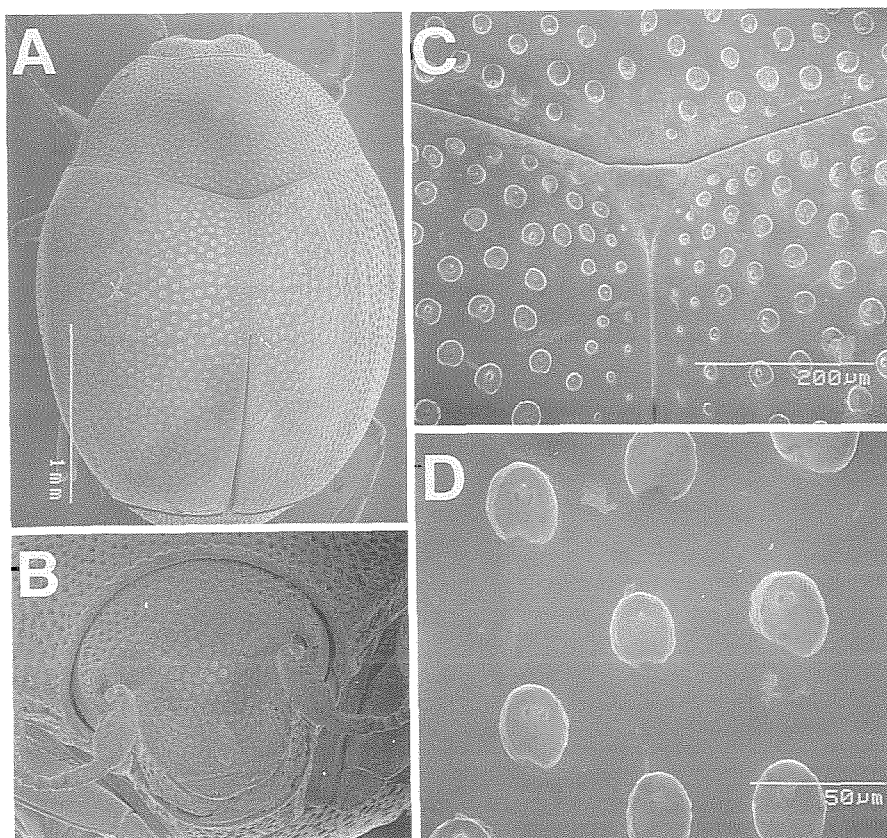


Fig. 92. *Anapleus hagai* M. Ôhara, sp. nov., adult. A: Dorsal view. B: Head, frontal view. C: Elytra around scutellum. D: Punctuation of medio-basal area of elytron.

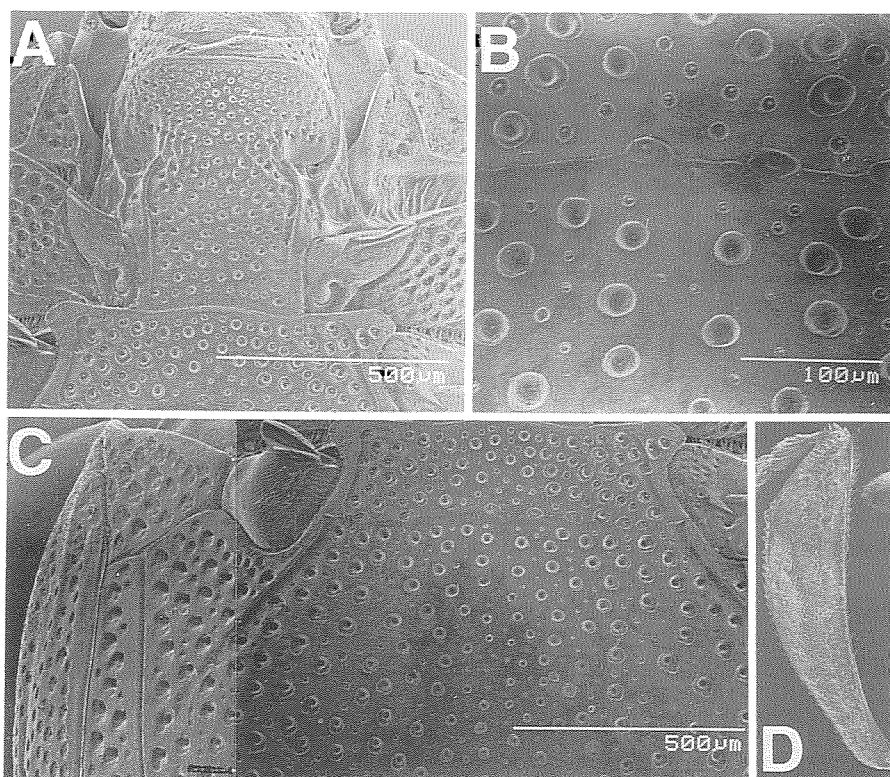


Fig. 93. *Anapleus hagai* M. Ôhara, sp. nov., adult. A: Prosternum, ventral view. B: Punctuation of intercoxal disk of metasternum. C: Meso- and metasterna. D: Protibia, ventral view.

Table 20. Biometric data of *Anapleus hagai* M. Ôhara.

APW	0.69-0.78	(0.74±0.02) 4
PPW	1.50-1.67	(1.61±0.03) 4
PL	0.82-0.92	(0.86±0.02) 4
EL	1.57-1.70	(1.65±0.03) 4
EW	1.96-2.09	(2.03±0.02) 4
ProW	0.92-1.08	(1.01±0.03) 4
ProL	0.29-0.39	(0.35±0.02) 4
PyL	0.46-0.59	(0.54±0.02) 4
PTL	0.65-0.78	(0.74±0.02) 4
MSTL	0.69-0.78	(0.73±0.02) 3
MTIL	0.82-0.85	(0.83±0.01) 4

impunctate. Dorsal striae obsolescent, but the 1st dorsal stria slightly impressed on mediobasal 1/4, and the 2nd slightly on about the basal 1/2.

Propygidium densely covered with moderate and deep punctures, which are as large as those on the elytral apices. Pygidium moderately punctate, the punctures

becoming denser and finer towards apical margin. Disk of pygidium convex and feebly depressed behind tip.

Anterior margin of prosternal lobe (Fig. 93A) straight, and indistinctly margined. Prosternal process nearly quadrate, its disk coarsely punctate, sometimes with fine punctures intermingled, and with complete carinal striae (Fig. 93A).

Anterior margin of mesosternum feebly and outwardly arcuate in median portion. Mesosternum short (width : length = 24 : 7), densely and coarsely punctate, with fine punctures intermingled. Lateral sides distinctly margined. Meso-metasternal suture with strongly crenated stria. Mesosternum even, densely covered with large and deep punctures, which are separated by 0.5 – 1 times the diameter, with fine punctures intermingled (Fig. 93B). Lateral metasternal stria extending obliquely and posteriorly, reaching near middle of metasternal-metepisternal suture. Intercoxal disk of 1st abdominal sternum completely striate on each side, densely covered with moderate punctures, which are coarser along the anterior margin.

Protibia (Fig. 93D) dilated, its outer margin with an obtuse angle at middle.

Male genitalia as shown in Fig. 94.

Specimens examined. Holotype, ♀, Ko-tombetsu, Naka-tombetsu, Hokkaidô, Japan, 25/vii/1987, K. Haga (EIHU).

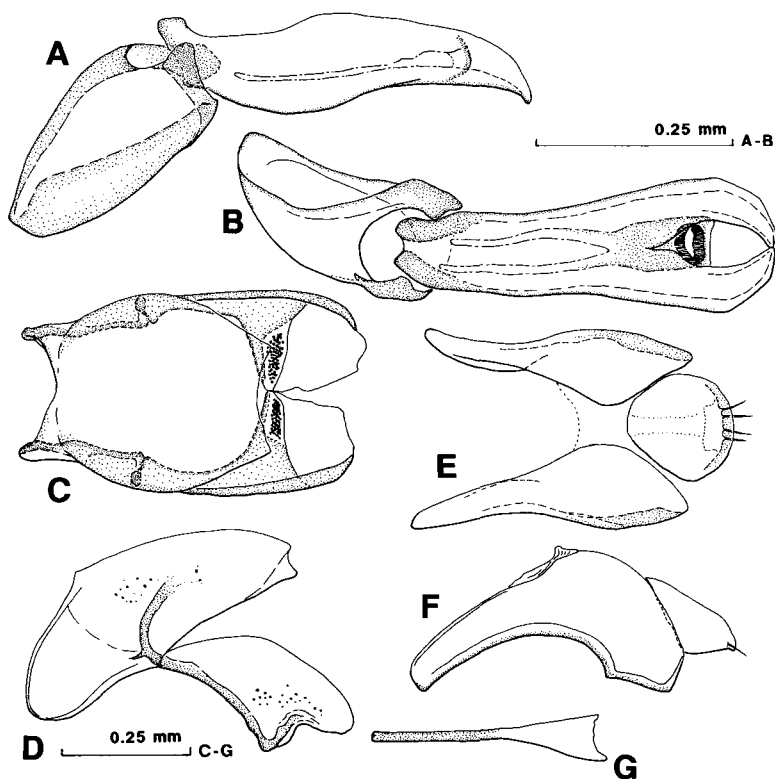


Fig. 94. *Anapleus hagai* M. Ôhara, sp. nov. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: 9th sternum (spicule), dorsal view.

Paratypes. [Hokkaidô] 1 ♀, Shintoku, 19/viii/1989, K. Haga; 1 ♀, Mt. Yôtei, Kutchan, 29/vii/1989, N. Yasuda. [Honshû] Aomori-ken: 1 ♂, Oirase-gawa, Fukura-machi, 1/viii/1988, S. Yamauchi.

Distribution. Japan (Hokkaidô, Hoshû).

Remarks. *Anapleus hagai* is easy to recognize by its large size and the depressed pygidium.

TRIBE BACANIINI KRYZHANOVSKIJ AND REICHARDT, 1976

The Japanese species included in the tribe Bacaniini have not been sufficiently studied until now. Probably 5 or more species occur in Japan. In this paper, the known Japanese species are only listed.

GENUS BACANIUS J. L. LECONTE, 1853

Bacanius J. L. LeConte, 1853: 291 [type species: *Bacanius tantillus* J. L. LeConte, 1853: 291, designated by Bickhardt, 1916: 71]; Lacordaire, 1854: 271; Marseul, 1856: 576; Schmidt, 1885a: 332; Reitter, 1886: 273; 1909: 297; Ganglbauer, 1899: 409; Cooman, 1936: 136; Reichardt, 1941: 84, 117; Wenzel and Dybas, 1941: 438; Wenzel, 1944: 54, 95-101; Arnett, 1962: 375, 380; Witzgall, 1971: 175; Kryzhanovskij and Reichardt, 1976: 267; Mazur, 1984: 118.

SUBGENUS MULLERISTER COOMAN, 1936

Mullerister Cooman, 1936: 137 [type species: *Bacanius tonkinensis* Cooman, 1936: 135, originally designated]; Mazur, 1984: 119.

Muellerister Kryzhanovskij and Reichardt, 1976: 270 (unjust. emend.).

Neobacanius G. Müller (part.), 1925: 20; Reichardt, 1941: 118, 121.

Bacanius (Mullerister) niponicus Lewis, 1879

Bacanius niponicus Lewis, 1879: 461 [Japan: Nagasaki].

Bacanius (Mullerister) niponicus: Mazur, 1984: 119; Hisamatsu, 1985b: 224, pl. 40, no. 22.

Bacanius (Muellerister) niponensis (sic): Kryzhanovskij et Reichardt, 1976: 268 [key].

Japanese name: Aka-tsubu-emma-mushi.

Distribution. Japan; Taiwan.

SUBGENUS BACANIUS J. L. LECONTE, 1853

Bacanius (Bacanius) mikado (Lewis, 1892)

Abraeus mikado Lewis, 1892b: 356 [Japan].

Bacanius mikado: Schmidt, 1893b: 238.

Bacanius (Bacanius) mikado: Kryzhanovskij and Reichardt, 1976: 269; Mazur, 1984: 122; Hisamatsu, 1985b: 224, pl. 40, no. 21.

Japanese name: Ko-aka-tsubu-emma-mushi.

Distribution. Japan (Honshû, Shikoku, Kyûshû).

TRIBE PAROMALINI REITTER, 1909

Key to the Japanese genera of the tribe Paromalini

- 1(2) Elytral disk with normal dorsal striae. Genus *Carcinops* Marseul, 1855
- 2(1) Elytral disk punctate, without normal dorsal striae except for vague rudiments.
- 3(4) Propygidium with a transverse line. Metasternal lateral stria not extended posteriorly. All tibiae dilated. Genus *Pachylomalus* Schmidt, 1879
- 4(3) Transverse line of pygidium not visible. Metasternal lateral stria extended posteriorly. Protibia dilated, but others narrow.
- 5(6) Prosternal keel without carinal stria. Genus *Paromalus* Erichson, 1834
- 6(5) Prosternal keel with carinal stria.
- 7(10) Frontal stria complete.
- 8(9) Basal margin of pronotum without an irregular row of large punctures. Body oblong-oval, and less convex. Genus *Platylomalus* Cooman, 1948
- 9(8) Basal margin of pronotum with an irregular row of large punctures. Body oval, and convex. Genus *Australomalus* Mazur, 1981
- 10(7) Frontal stria interrupted behind labrum. Genus *Eulomalus* Cooman, 1937

GENUS CARCINOPS MARSEUL, 1855

Carcinops Marseul, 1855: 83 [type species: *Dendrophilus quattuordecimstriatus* Stephens, 1835: 412, designated by Bickhardt, 1917: 113]; Schmidt, 1885b: 283; Ganglbauer, 1899: 373; Reitter, 1909: 287; Jakobson, 1911: 640, 647; Bickhardt, 1916-17: 108, 112-114; 1921: 149; Arnett, 1962: 375, 380; Witzgall, 1971: 177; Kryzhanovskij and Reichardt, 1976: 263; Mazur, 1984: 127.

SUBGENUS CARCINOPS MARSEUL, 1855

Carcinops (Carcinops) pumilio (Erichson, 1834)
(Fig. 95, 96, 97)

Paromalus pumilio Erichson, 1834: 169 [Spain, Egypt, North America]; Wollaston, 1854: 213; Redtenbacher, 1858: 313.
Dendrophilus quattuordecimstriatus Stephens, 1835: 412, synonymized by Gemminger and Harold, 1868: 777.
Paromalus quattuordecimstratus: Horn, 1873: 308.
Dendrophilus pumilio: Dejean, 1837: 143.
Hister nanus J. E. LeConte, 1845: 61, synonymized by Gemminger and Harold, 1868: 777.
Dendrophilus nanus Dejean, 1837: 143 [nom. nud.].
Phelister nanus: Marseul, 1857: 476.
Carcinops quattuordecimstriatus: Wollaston, 1864: 166; Kolbe, 1909: 21; Scott, 1913: 225; Bickhardt, 1917: 114; Hinton, 1945: 334.
Carcinops quattuordecimstriatus: Ganglbauer, 1899: 374; Reitter, 1909: 287; Jakobson, 1911: 647; Auzat, 1916-25: 106; Horion, 1949: 347.
Epierus krujanensis Mader, 1921: 181, synonymized by Mader, 1927: 193.
Carcinops pumilio: Marseul, 1855: 91; 1873: 221 [Japan, Nangasaki]; Seidlitz, 1891: 216; Kolbe, 1909: 21; Kuhnt, 1913: 371; Wenzel, 1955: 608, 617; Witzgall, 1971: 177; Kryzhanovskij and Reichardt, 1976: 264; Hisamatsu, 1985b: 224, pl. 40, no. 24.

Japanese name: Kuro-chibi-emma-mushi.

A good description is given by Hinton (1949) under the name *Carcinops quattuordecimstriatus*.

Description. Body length, PPL, 1.98 – 2.57 mm (2.39 ± 0.03 , n=20), PEL, 1.76 – 2.40 mm (2.19 ± 0.03 , n=20). Width, 1.30 – 1.74 mm (1.60 ± 0.02 , n=20). Biometric data are given in Table 21. Marginal elytral stria well impressed and complete. Marginal epipleural stria complete. Epipleura with another stria between marginal elytral and epipleural striae, which is strongly crenate with coarse punctures and complete. In Japanese specimens, the apical non-striate belt of elytra only with fine punctures, not covered with coarse ones. Apical 1/2 of 1st and 2nd intervals of dorsal striae and apical 1/3 of the 3rd – 5th usually covered with coarse and fine punctures. Prosternal lobe densely and coarsely punctate, the punctures becoming sparser mediobasally. Laterobasal angles of the lobe deeply margined, and lateral 1/3 of suture between keel and lobe strongly and deeply with a longitudinal impression, which

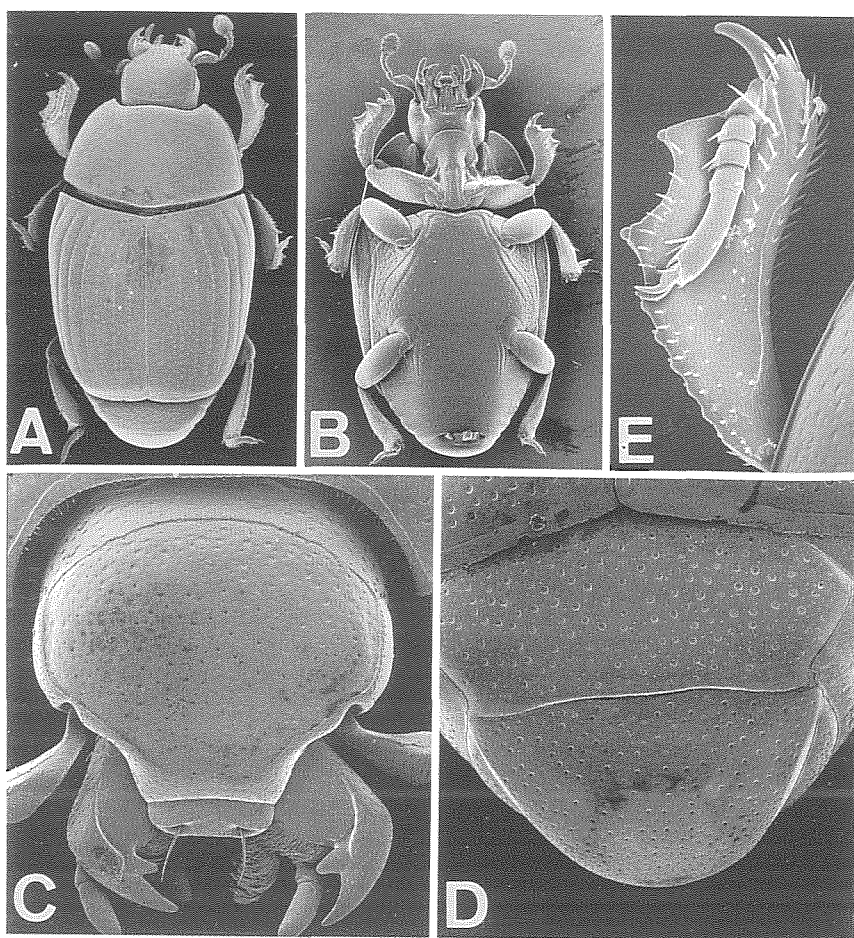


Fig. 95. *Carcinops (Carcinops) pumilio* (Erichson). A: Adult, dorsal view. B: Ditto, ventral view. C: Head, frontal view. D: Propygidium and pygidium. E: Protibia, dorsal view.

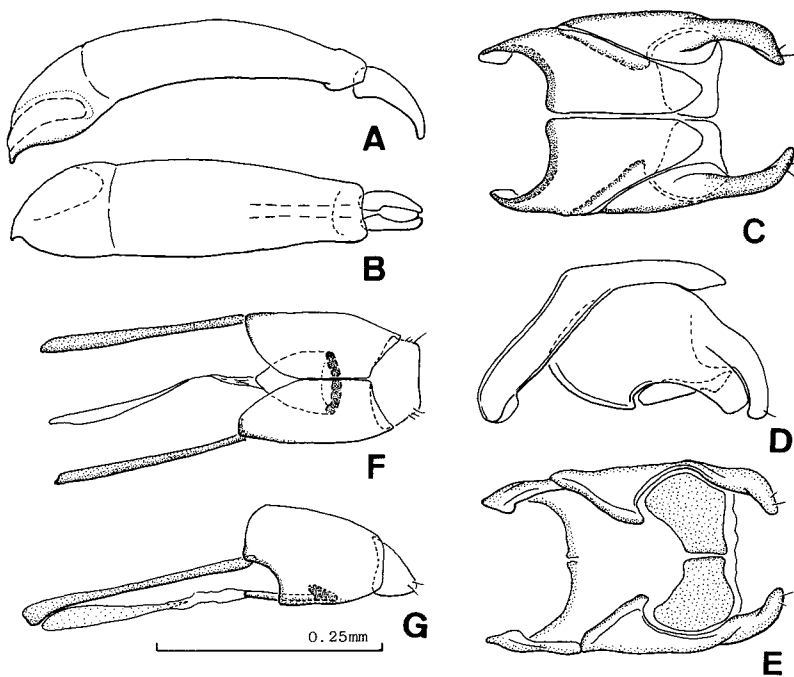


Fig. 96. *Carcinops (Carcinops) pumilio* (Erichson). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Ditto, ventral view. F: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. G: Ditto, lateral view.

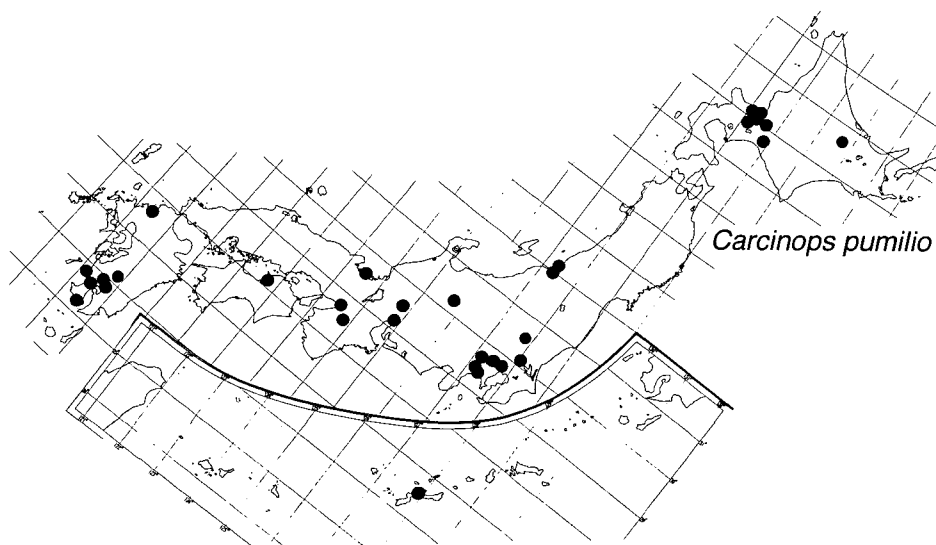


Fig. 97. Collection sites of *Carcinops (Carcinops) pumilio* (Erichson) in Japan.

Table 21. Biometric data of *Carcinops pumilio* (Erichson) and *Australomalus montivagus* (Lewis).

	<i>C. pumilio</i>	<i>A. montivagus</i>
APW	0.54-0.74 (0.68±0.01) 20	0.88-1.10 (0.99±0.01) 16
PPW	1.15-1.49 (1.39±0.02) 20	1.88-2.38 (2.11±0.04) 16
PL	0.56-0.78 (0.73±0.01) 20	1.00-1.25 (1.17±0.02) 16
EL	1.18-1.49 (1.39±0.02) 20	2.07-2.57 (2.29±0.04) 16
EW	1.30-1.74 (1.60±0.02) 20	2.13-2.95 (2.51±0.05) 16
ProW	0.78-0.96 (0.85±0.01) 20	1.07-1.57 (1.24±0.03) 16
ProL	0.27-0.42 (0.36±0.01) 20	0.38-0.56 (0.42±0.01) 16
PyL	0.34-0.49 (0.44±0.01) 20	0.47-0.75 (0.67±0.02) 16
PTL	0.51-0.69 (0.58±0.01) 19	0.75-0.94 (0.86±0.02) 16
MSTL	0.54-0.69 (0.59±0.01) 19	0.69-0.88 (0.81±0.02) 16
MTTL	0.51-0.74 (0.68±0.01) 20	0.82-1.07 (0.95±0.02) 16

extends obliquely and posteriorly on prosternum. Protibia (Fig. 95E) with 2 large denticles on apical 1/2 and 3 or 4 small ones on basal 1/2 of outer margin, the interval between large ones wide, being about 1/3 as long as protibia.

Male genitalia as shown in Fig. 96.

Specimens examined. [Hokkaidô] 1 ex., Kun'neppu, 16/ix/1989, H. Torikura; 4♀♀, Bibi, 28/vi/1987, M. Ôhara; 1 ex., Naganuma, 4/viii/1989, A. Iwasaki; 2 exs., Hitsuji-ga-oka, Sapporo, 20/vii/1985, M. Ôhara; 1 ex., Sapporo, 27/vii/1985, M. Suwa; 1 ex., Ditto, 2/vii/1987, S. Kondo; 1 ex., Hakken-zan, Sapporo, 13/vii/1985, M. Ôhara; 16♀♀, Jôzankei, 27, 30/viii, 1/x/1985, 1986, M. Ôhara; 6 exs., Misumai, Sapporo, 14/vii/1986, M. Ôhara; 1 ex., Nakagoya, Ishikari-Tôbetsu, 8/vii/1990, S. Shiyake; 1♀, 2 exs., Zenibako, 30/viii/1985, M. Ôhara; 1 ex., Ditto, 19/vi/1979, N. Nishikawa.

[Honshû] Ibaraki-ken: 1 ex., Tsukuba-Gakuen-Toshi, 3/v/1979, M. Ôhara. Tochigi-ken: 1 ex., Miyuki, Utsunomiya-shi, 11/v/1980, T. Kumazawa (TPM). Tôkyô-to: 1 ex., Mt. Jimba, 16/vi/1967, H. Takizawa; 1 ex., Kinuta, 28/vi/1964, Y. Kurosawa (NSMT); 3 exs., Tôkyô, 24/v/1971, no collector's name (NSMT); 1 ex., Kunitachi, 3/vii/1958, S. Nomura (NSMT). Kanagawa-ken: 1 ex., Fudakake, Tanzawa, 15/vii, 1971, M. Ishida; 31 exs., Hatano, 5/vi/1971, 7/viii/1972, 22/vi/1974, 16/ix/1976, 28/v/1977, 24/vi/1984, 7/vii/1985, H. Takizawa; 2 exs., Izu, Daruma-yama, 25/vii/1966, M. Ishida. Gumma-ken: 1 ex., Ôsawa, 15/vi/1963, S. Kondo. Nagano-ken: 1 ex., Shimashima, Shinano, 29/vii/1948, S. Ôsawa. Niigata-ken: 2 exs., Senami, northern Echigo, 14/ix/1986, K. Baba; 1 ex., Kurokawa, Echigo, 10/viii/1958, K. Baba; 1 ex., Mizutanizawa, Mt. Minô-jî, northern Echigo, 7/vi/1958, K. Baba. Aichi-ken: 2 exs., Shikatsu-mura, Owari, 25/x/1945, 27/iv/1946, S. Ôsawa (NA); 1 ex., Meito-ku, Nagoya, 13/ix/1986, T. Tanabe; 1 ex., Higashiyama, Nagoya, Owari, 13/v/1949, T. Nakane (NA); 1 ex., Nagoya, 13/vi/1947, S. Ôsawa (NA); 1 ex., Ditto, 30/ix/1945, T. Nakane (NA); 4 exs., Ditto, viii/1950, no collector's name. Gifu-ken: 1 ex., Minô-shi, 19/v/1979, Y. Takai. Ôsaka-fu: 2 exs., Nishinari, 12/vi/1949, 17/v/1951, K. Sawada (NA). Nara-ken: 1 ex., Kasuga, 22-23/ix/1968, S. Kondo & T. Okutani. Fukui-ken: 1 ex., Inumi, Ôi, 9/v/1987, T. Itô. Shiga-ken: 1 ex., Ômi-hachiman, 15/x/1990, S. Shiyake. Tottori-ken: 15 exs., Daisen, 12/x/1987, M. Ôhara.

[Shikoku] Kagawa-ken: 1 ex., Toyonaka-chô, Sampô-gun, 4/v/1980, S. Ohmomo (NSMT).

[Kyûshû] Fukuoka-ken: 1 ex., Hakozaki, 3/vii/1946, Y. Kurosawa (NA); 1 ex., Mt. Adachi, 31/v/1969, S. Nakao (NA). Kumamoto-ken: 60 exs., Yokoshima-chô, Tamana-shi, 9/vi/1986, E. Matsui; 3 exs., Ue-mura, Kuma-gun, 6/vi/1986, E. Matsui. Miyazaki-ken: 1 ex., Takachiho-no-mine, 9/vii/1984, S. Masuda; 99 exs., Ditto, 19, 27/vii/1983, 10/vii/1984, M. Ôhara; 6 exs., Ebino-kôgen, 29/iv/1986, E. Matsui. Kagoshima-ken: 3 exs., Toso, Kagoshima-shi, 7/iv/1984, M. Ôhara; 1 ex., Kôrimoto, Kagoshima-shi, 16/vi/1981, Y. Takai; 4 exs., Chôjô-bokujô, Kushikino, 20/v/1984, M. Ôhara; 51 exs., Iriki-bokujô, 17/iii/1985, K. Tomiyama; 1 ex., Kirishima, 29/vii/1971, T. Nakane (NA); 15 exs., Kaïmon, Satsuma, 1/vi/1983, K. Tomiyama (NA); 14 exs., Kamijô-Kôgen, Kihoku-chô, 26/v/1985, Y. Harada; 1 ex., Chôsa, 22/v/1984, M. Ôhara.

[Nansei Isles] Okinawa-Hontô Is.: 1 ex., Nago sea park, 22/iii/1983, T. & T. Nakane (NA). Iô-

tori-shima Is.: 5 exs., 128°15', 27°50', 13/vii/1991, Y. Kusui.

[Ogasawara Isles] Haha-jima Is.: 1 ex., Kita-mura, vii-ix/1976, Y. Yoshida (NA).

Distribution (Fig. 97). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Izu Isles, Nansei Isles, Ogasawara Isles); nearly cosmopolitan.

Remarks. *Carcinops pumilio* is easily recognized by the characteristics given in the key and description: it cannot be confused with any other Japanese species of the tribe Paromalini.

The species occurs on various decaying organic matters, such as compost piles, cow, pig and hen manure, donkey and human excrement, carrion, under bark, etc. Hinton (1945) summed up the habitats of this species and also recorded it in waste grain in the store house.

Jones (1929) noted that this species is an intermediate host of *Hymenolepis carioca*.

GENUS AUSTRALOMALUS MAZUR, 1981

Australomalus Mazur, 1981b: 379 [type species: *Australomalus fijianus* Mazur, 1981b: 379].

Australomalus montivagus (Lewis, 1892) (Fig. 98, 99, 100)

Paromalus montivagus Lewis, 1892a: 37 [Japan: Fujisan].

Platylomalus montivagus: Kryzhanovskij and Reichardt, 1976: 275; Hisamatsu, 1985b: 224, pl. 40, no. 26.

Australomalus montivagus: Mazur, 1984: 133.

Japanese name: Maru-chibi-hirata-cimma-mushi.

Description. Male and female. Body length, PPL, 3.57 – 3.70 mm (3.62 ± 0.03 , n=4), PEL, 3.39 – 3.51 mm (3.43 ± 0.03 , n=4). Width, 2.13 – 2.95 mm (2.51 ± 0.05 , n=16). Biometric data are given in Table 21. Body oval, black and shining; tarsi, mouthparts and antennae reddish brown.

Head sparsely covered with coarse punctures, which are separated by 2 or 3 times their diameter, the punctures becoming a little finer anteriorly; interspace among the punctures with alutaceous microsculptures.

Pronotum (Fig. 98A) sparsely covered with coarse, somewhat longitudinal oblong, and shallow punctures, which are separated by 2 – 4 times their diameter, and with other fine punctures intermingled; interspace among these punctures with alutaceous microsculptures.

Epipleural marginal stria fine and complete. Elytral marginal stria (Fig. 98A) (in original description, epipleural stria) strongly impressed and carinate. Epipleura impunctate, with alutaceous microsculptures. Oblique humeral stria present on basal 1/4.

Propygidium densely covered with large, round and shallow punctures, which are unevenly separated by 0.3 – 1 times the diameter. The punctation is not similar to that of the pronotum in disagreement with the original description.

The male and female are confused in the original description; in reality, the pygidium is sparsely clothed with fine punctures and with alutaceous microsculptures in the male; in the female it has a coarse vermicular sculpture (Fig. 98C).

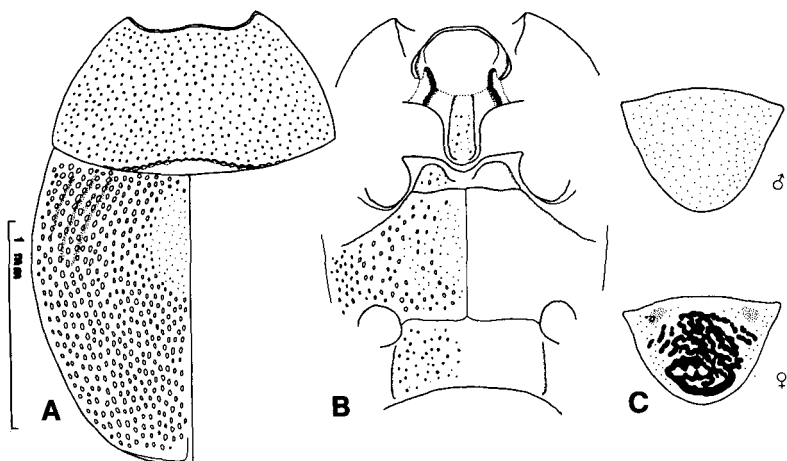


Fig. 98. *Australomalus montivagus* (Lewis). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

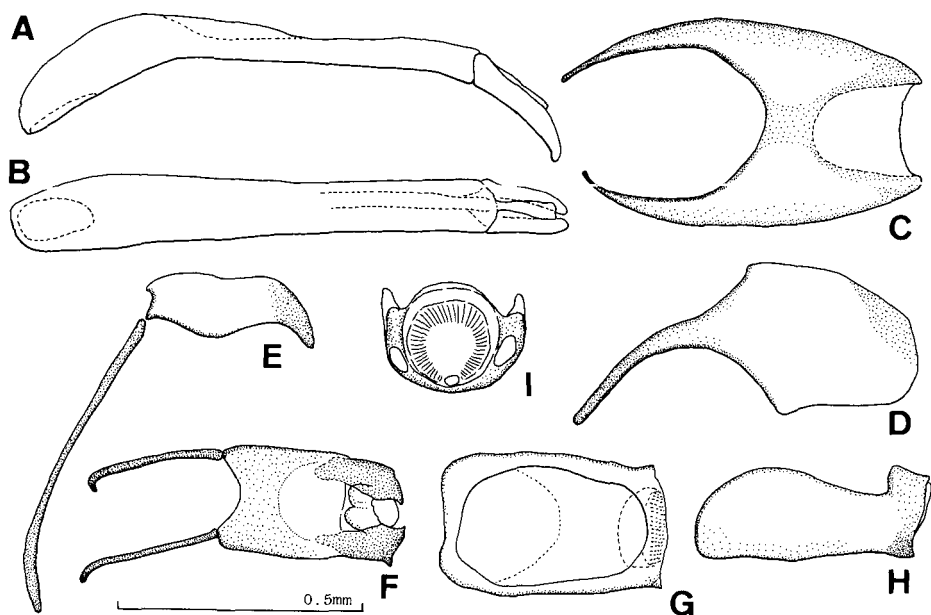


Fig. 99. *Australomalus montivagus* (Lewis). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Male genitalia, 8th sternum, dorsal view. H: Ditto, lateral view. I: Ditto, caudal view.

Anterior margin of prosternal lobe (Fig. 98B) truncate, its marginal stria complete and inwardly curved basally; lateral side of the lobe with another short strongly carinate margin; disk of the lobe evenly and finely punctate, the punctures being separated by about twice their diameter and becoming finer and sparser around margin. Prosternal

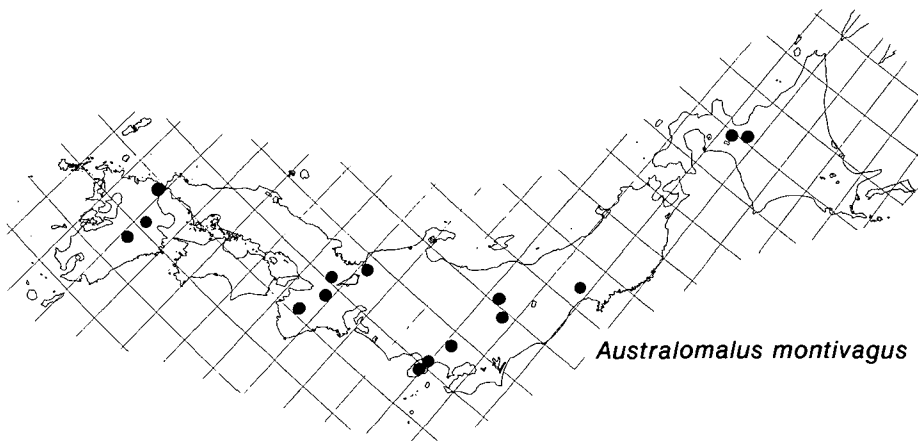


Fig. 100. Collection sites of *Australomalus montivagus* (Lewis) in Japan.

process completely with carinal striae, which are strongly carinate and nearly parallel, and of which the basal ends are usually not jointed with each other along the basal margin of the lobe.

Anterior margin of mesosternum (Fig. 98B) deeply emarginate at middle, its marginal stria carinate and nearly complete, being shortly interrupted at middle; disk sparsely covered with fine punctures. Meso-metasternal suture strongly carinate, complete and widely sinuous. Disk of metasternum sparsely covered with large, oblong and shallow punctures, which are separated by 2 – 5 times their diameter, and become finer medially; area along mid line finely punctate, sometimes densely punctate; interspace among punctures with alutaceous microsculpture; surface feebly depressed mediobasally. Lateral metasternal stria carinate, extending obliquely and posteriorly, attaining to near basal 1/3 of metasternal-metepisternal suture.

Intercostal disk of 1st abdominal sternum sparsely covered with coarse punctures, which are separated by 2 – 5 times their diameter.

Protibia dilated, with 5 or 6 denticles on outer margin.

Male genitalia as shown in Fig. 99.

Specimens examined. [Hokkaidô] 1 ♀, Nopporo, 30/v/1987, S. Kudô; 1 ♂, Ditto, 21/v/1985, M. Ôhara; 1 ♀, Maruyama, 28/iii/?, no collector's name (EIHU).

[Honshû] Miyagi-ken: 1 ♂, Moriyasu, Akiu-mura, 24/vi/1951, no collector's name (NSMT). Fukushima-ken: 1 ♂, Hirasawa-rindô, Hinoemata-mura, 21/v/1988, H. Haga; 1 ♂ 1 ♀, Hizumari, Tateiwa, Minami-Aizu, 8/v/1949, Y. Kurosawa (NSMT); 1 ♂, Yunohana, Tateiwa, Minami-Aizu, 7/v/1949, Y. Kurosawa (NSMT); 1 ex., Ôtakiyama, Omata, Ônuma, 15/vii/1950, Y. Kurosawa (NSMT). Yamagata-ken: 1 ♀, Tokuami, Kitaoguni, Oguni, 2/vi/1957, I. K. (NSMT). Tochigi-ken: 1 ex., Usukubo-Daira, Oku-Kinu, Kuriyama-mura, 17/v/1989, K. Satoh (TPM). Tôkyô-to: 1 ♀, Nippara, Okutama, 12/iv/1983, M. Ishida. Kanagawa-ken: 1 ♂, Ôwaki-dani, Hakone, 19/ix/1976, Y. Hirano. Shizuoka-ken: 1 ♂, Mt. Amagi, 27/v/1956, H. Hayashi. Niigata-ken: 1 ♀, Sasagamine, Myôkô-Kôgen, 29/viii/1932, Y. Kusui. Gifu-ken: 2 ♂ ♂ 1 ♀, Kammuri-yama-tôge, Tokuyama, 1/vi/1986, Y. Takai; 1 ♂, Ditto, 11/v/1986, Y. Takai; 1 ♂, Ditto, 10/x/1986, Y. Takai. Nara-ken: 1 ♂, Kasuga, 9/iv/1950, S. Uéno; 2 ♂ ♂ 1 ♀, Ditto, 20/v/1951, K. Sawada. Kyôto-fu: 1 ♂, Kibune, 9/iii/1950, A. Nobuchi; 1 ♂ 1 ♀, Ditto, 9/vi/1953, A. Nobuchi. Wakayama-ken: 1 ♀, Mt. Gomanodan, 2/viii/1957, H. Kono (Ôsaka Mus.).

[Kyûshû] Fukuoka-ken: 2 exs., Mt. Adachi, 7/vii/1982, 28/iv/1964, S. Nakao (NA). Ôita-ken:

1 ex., Mt. Kujû, 20/v/1979, S. Nakao (NA). Miyazaki-ken: 2 exs., Mt. Sobo, 10-12/v/1969, H. Takizawa.

Distribution (Fig. 100). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû). Newly recorded from Hokkaidô and Kyûshû.

Remarks. *Australomalus montivagus* is quite peculiar by its very broadly oval and convex form and the transverse punctured row on the posterior margin of the pronotum; it cannot be confused with any other species of the tribe.

No details are known about habitat requirements of this species. Some specimens were collected in rotting woods.

GENUS PLATYLOMALUS COOMAN, 1948

Platylomalus Cooman, 1948: 134 [type species: *Hister complanatus* Panzer, 1797].

Paromalus Lewis, 1907a: 316, nec Erichson, 1834: 167, synonymized by Cooman, 1948: 134.

Key to the Japanese species of the genus *Platylomalus*

- 1(4) Apical end of marginal elytral stria extending to suture of elytron, and curved at medio-posterior angle of elytron, then extending anteriorly.
- 2(3) Disk of mesosternum with a transverse stria, which is trapezoid. Pygidium of female deeply engraved with furrows. *P. fujisanus* (Lewis, 1892)
- 3(2) Disk of mesosternum without a transverse stria. Pygidium of female densely punctate at apex, not engraved with furrows. *P. viaticus* (Lewis, 1892)
- 4(1) Apical end of marginal elytral stria not attaining to suture of elytron.
- 5(6) Elytra coarsely punctate, the area along oblique humeral depression with large punctures. Disk of mesosternum without a transverse stria. *P. kusuii* M. Ôhara, sp. nov.
- 6(5) Elytra rather evenly punctate, without large punctures. Disk of mesosternum with a transverse stria. (In *P. mendicus*, the transverse stria sometimes absent.)
- 7(8) Transverse stria of mesosternum trapezoid. Mesotibia clearly with 3 spines. Metatibia with 1 spine. Pygidium of female engraved with a large and ocelloid sculpture.
..... *P. persimilis* (Lewis, 1888)
- 8(7) Disk of mesosternum with a transverse stria, which is smoothly curved and sometimes interrupted. Mesotibia with 4 spines. Metatibia with 2 spines.
- 9(10) Body length 3.0 – 3.5 mm. Marginal stria of pronotum nearly complete anteriorly. Pygidium of female engraved with irregular furrows except on its margin. *P. niponicus* (Lewis, 1899)
- 10(9) Body length 1.8 – 2.3 mm. Marginal stria of pronotum broadly interrupted at anterior middle. Pygidium of female engraved with a pair of curved sculptures. *P. mendicus* (Lewis, 1892)

Platylomalus fujisanus (Lewis, 1892)

(Fig. 101, 102)

Paromalus fujisanus Lewis, 1892a: 34 [Japan: Honshû]; Cooman, 1937: 160.

Platylomalus fujisanus: Hisamatsu, 1968: 31 [Shikoku]; 1985b: 224 [photo]; Kryzhanovskij and Reichardt, 1976: 276; Mazur, 1984: 134.

Japanese name: Fuji-chibi-hirata-emma-mushi.

Description. Male and female. Body length, PPL, male, 1.62 – 1.97 mm (1.82 ± 0.03 , $n=13$), female, 1.56 – 2.01 mm (1.76 ± 0.04 , $n=13$), PEL, male, 1.52 – 1.85 mm (1.70 ± 0.03 , $n=13$), 1.50 – 1.77 mm (1.64 ± 0.02 , $n=13$). Width, male, 1.00 – 1.18 mm (1.10 ± 0.02 , $n=13$), female, 0.99 – 1.14 mm (1.08 ± 0.01 , $n=13$). Biometric data are given in Table 22. Body oblong, black and shining; femora, tarsi, mouthparts and antennae red brown.

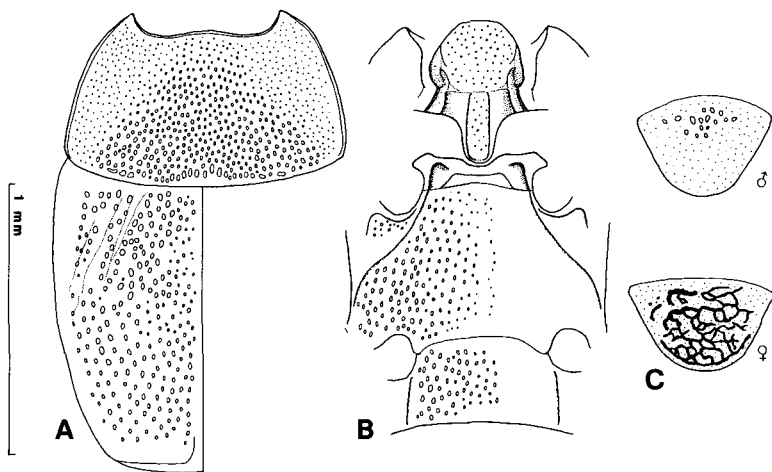


Fig. 101. *Platylomalus fujisanus* (Lewis). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

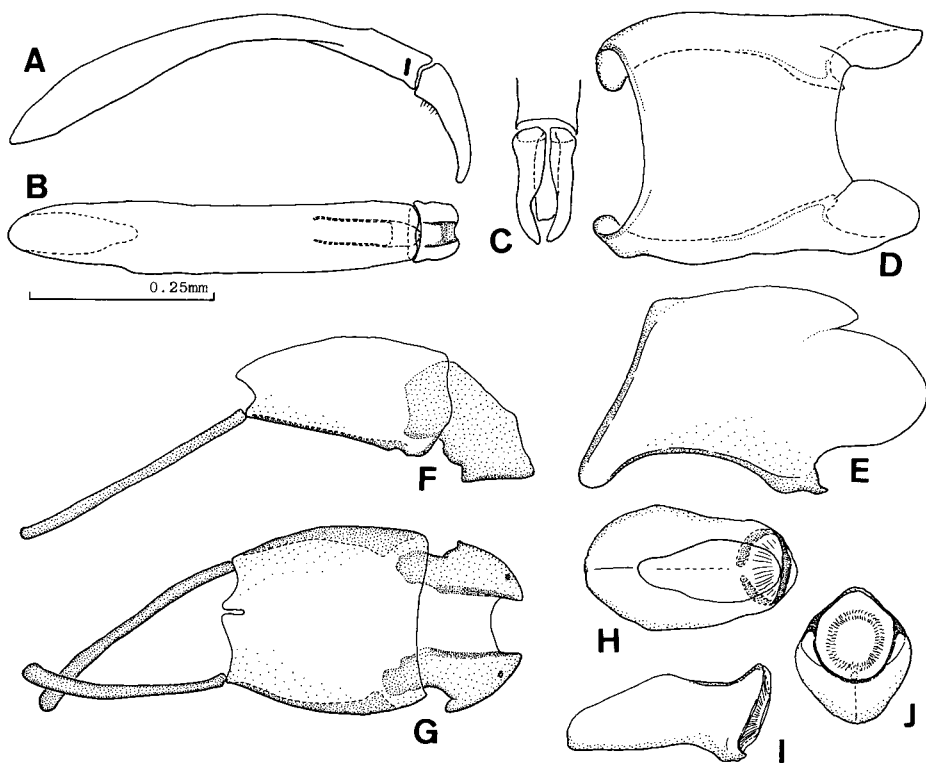


Fig. 102. *Platylomalus fujisanus* (Lewis). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite, dorsal view. E: Ditto, lateral view. F: Male genitalia, 9th and 10th tergites, dorsal view. G: Ditto, lateral view. H: Male genitalia, 8th sternum, dorsal view. I: Ditto, lateral view. J: Ditto, caudal view.

Frontal stria of head weakly carinate and complete. Disk of head sparsely clothed with fine and deep punctures, which are separated by 2 – 4 times their diameter and become denser apically.

Pronotal sides (Fig. 101A) evenly and rather strongly convergent forward. Surface of pronotum weakly depressed behind eyes. Marginal stria weakly carinate and complete laterally and apically. Disk of pronotum evenly and moderately punctate except near the apical angles and behind eyes, the impunctate areas being clothed with microscopic punctures only; the moderate-sized punctures becoming denser and finer on lateral 1/3 and becoming coarser along basal margin, with the microscopic punctures intermingled. Antescutellar area with a shallow and longitudinal depression.

Epipleural marginal stria present on apical 1/2 and well impressed. Marginal elytral stria deeply impressed and complete, its apical end extended along apical margin of elytron, attaining to sutural angle, then inwardly bent, and shortly extended anteriorly. Epipleura impunctate, rarely clothed with microscopic punctures, and with coarse rugae medially. Disk of elytra evenly and coarsely punctate except on a narrow band along the suture, which is clothed with microscopic punctures and feebly elevated, and on extreme apical band; the coarse punctures somewhat longitudinal and separated by 1 – 3 times the diameter, becoming coarser around scutellum and near oblique depression, their interspaces with microscopic punctures intermingled. Dorsal stria absent, but oblique and shallow depressions present on laterobasal 1/2.

Propygidium sparsely covered with coarse, shallow and round punctures, which become sparser and finer laterally and basally. Pygidium (Fig. 101C) evenly covered with fine punctures, which are separated by twice their diameter; some oblong, shallow and large punctures present near the basal margin. In female, whole surface except for a narrow area along margin evenly covered with vermicular sculptures (Fig. 101C).

Anterior margin of prosternal lobe (Fig. 101B) truncate anteriorly; marginal stria of lobe absent; basal angles strongly carinate and its insides deeply depressed; disk irregularly scattered with moderate or coarse and deep punctures, which are separated by 2 – 5 times their diameter. Prosternal process completely with carinal striae, which are well impressed and feebly divergent apically; disk sparsely and finely punctate. Lateral descending stria short and strongly carinate.

Anterior margin of mesosternum strongly emarginate at middle; marginal stria absent anteriorly, but complete and well impressed laterally, its anterior end strongly bent inwards and posterior end continued to lateral metasternal stria; disk with punctuation similar to that of prosternal process; transverse stria well impressed, straight on middle part, and obliquely and posteriorly arcuate on each side, usually not angulate (sometimes angulate). Meso-metasternal suture indistinct. Intercostal disk of metasternum evenly covered with longitudinal and moderate punctures, which are separated by about 1.5 (1 – 2) times the diameter, and become finer medially and coarser laterally. Lateral disk covered with few large punctures around margin. Lateral metasternal stria well impressed, extending obliquely and posteriorly and attaining to near apical 1/3.

Intercostal disk of 1st abdominal sternum evenly covered with oblong and coarse punctures, which become finer medially and are separated by 2 – 4 times their diameter. First abdominal stria complete and well impressed.

Protibia with 4 denticles on outer margin. Mesotibia with 3 spinules on outer margin. Metatibia with 2 spinules near the apex.

Male genitalia as shown in Fig. 102.

Table 22. Biometric data of *Platylomalus fujisanus* (Lewis).

	Male	Female
APW	0.47-0.57 (0.53± 0.01) 13	0.47-0.55 (0.51± 0.01) 13
PPW	0.95-1.12 (1.02± 0.02) 13	0.91-1.06 (0.99± 0.01) 13
PL	0.51-0.67 (0.59± 0.01) 13	0.55-0.65 (0.59± 0.01) 13
EL	0.89-1.10 (1.02± 0.02) 13	0.85-1.12 (1.00± 0.02) 13
EW	1.00-1.18 (1.10± 0.02) 13	0.99-1.14 (1.08± 0.01) 13
ProW	0.47-0.59 (0.53± 0.01) 13	0.49-0.59 (0.55± 0.01) 13
ProL	0.12-0.20 (0.18± 0.01) 13	0.16-0.55 (0.38± 0.05) 13
PyL	0.22-0.32 (0.26± 0.01) 13	0.24-0.32 (0.27± 0.01) 13
PTL	0.35-0.43 (0.40± 0.01) 13	0.35-0.45 (0.40± 0.01) 13
MSTL	0.33-0.43 (0.38± 0.01) 13	0.33-0.39 (0.37±0.005) 13
MTTL	0.45-0.53 (0.50±0.005) 13	0.39-0.45 (0.42± 0.01) 13

Specimens examined. [Honshû] Aomori-ken: 1 ♀, Towada, 16-19/vi/1968, H. Takizawa. Nagano-ken: 1 ex., Togakushi, 9/viii/1963, Y. Kishi; 1 ex., Agematsu, Koma-ga-take, 12/vi/1949, S. Ôsawa and T. Nakane. Gifu-ken: 2 ♂♂ 3 ♀♀, Kammuri-yama-tôge, Tokuyama-mura, 10/x/1986, 26/xi/1988, Y. Takai. Mie-ken: 1 ex., Okimi Pass, 12/vi/1952, H. Ishida. Wakayama-ken: Gomadan, 27/viii/1967, M. Yoshida. Hyôgo-ken: 2 exs., Hataganaru, 24, 26/vi/1955, T. Nakane; 1 ♂, Hyônoson, 27/iv/1986, T. Itô. Tottori-ken: 1 ex., Daisen, 26/iv/1942, K. Sakaguchi; 1 ex., Ditto, 6/vi/1955, K. Sawada; 1 ex., Ditto, 11/vii/1948, M. Iga; 3 exs., Ditto, Hôki, 800 m, 4/viii/1942, M. Azuma. Sado Is.: 1 ♂, Tatara-mine, 28/vii/1947, M. Iga.

[Kyûshû] Fukuoka-ken: 2 ♂♂ 1 ♀, Mt. Hiko-san, 23/x/1985, M. Ôhara. Kumamoto-ken: 1 ♀, Shiraga-dake, 13/v/1984, M. Ôhara. Miyazaki-ken: 1 ex., Mt. Sobo, 10-12/v/1967, H. Takizawa.

Distribution. Japan (Honshû, Kyûshû). New to Kyûshû.

Remarks. *Platylomalus fujisanus* resembles *P. viaticus* superficially, but they can readily be distinguished by several characteristics given in the key and description.

Little is known about the habitat of this species. Some specimens were collected under bark.

Platylomalus mendicus (Lewis, 1892)

(Fig. 103, 104, 105)

Paromalus mendicus Lewis, 1892a: 33 [Japan]; Lewis, 1899: 21 [Java]; Cooman, 1937: 138 [Shanghai, Indochina].

Platylomalus mendicus: Cooman, 1948: 138; Mazur, 1984: 135; Hisamatsu, 1985b: 225 [photo].

Japanese name: Hime-chibi-hirata-emma-mushi.

Description. Male and female. Body length, PPL, 1.87 – 2.23 mm (2.05 ± 0.02, n=20), PEL, 1.73 – 2.03 mm (1.90 ± 0.02, n=20). Width, 1.14 – 1.34 mm (1.26 ± 0.01, n=20). Biometric data are given in Table 23. Body oblong, dark brown or black and shining; femora, tibiae, mouthparts and antennae rufopiceous.

Frontal stria (Fig. 104C) of head well impressed and complete. Disk sparsely covered with moderate punctures which are separated by 2 – 4 times their diameter and become a little denser apically; area between the punctures shining.

Pronotal sides (Fig. 103A, 104A) feebly arcuate and convergent forward on basal 2/3, then strongly convergent apically. Emarginated portion of anterior margin of pronotum feebly bisinuate. Marginal stria complete laterally, but broadly interrupted

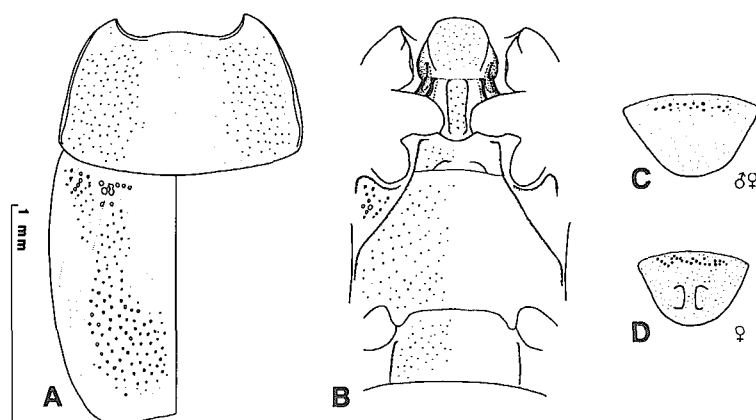


Fig. 103 *Platylomalus mendicus* (Lewis). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium of the specimens from Fukushima pref., Honshû. D: Ditto, from Okinawa, Ryûkyû Isles.

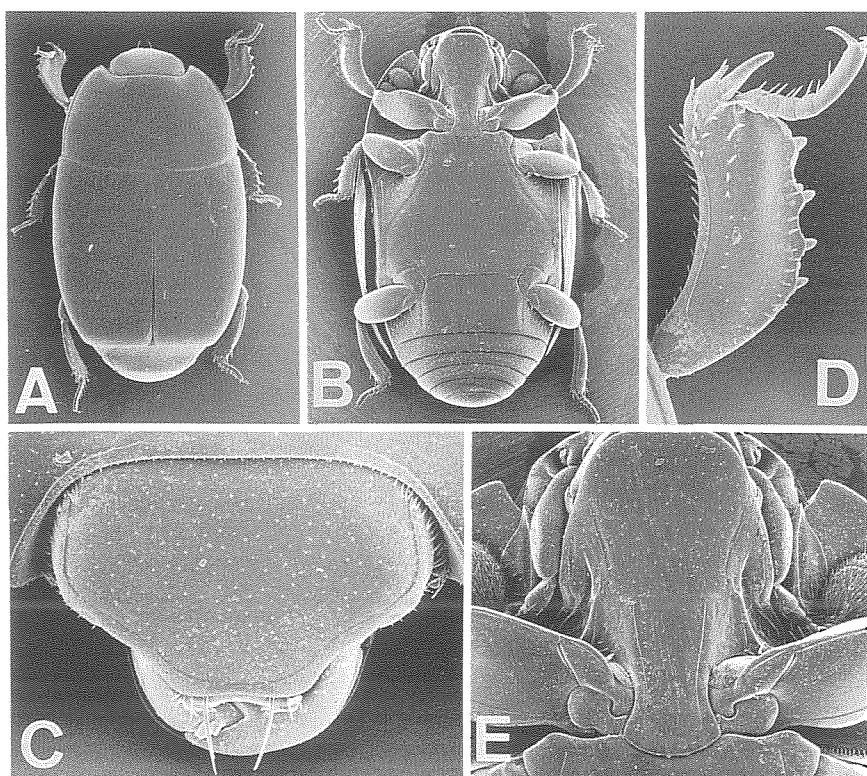


Fig. 104. *Platylomalus mendicus* (Lewis). A: Adult, dorsal view. B: Ditto, ventral view. C: Head, frontal view. D: Protibia, dorsal view. E: Prosternum, ventral view.

anteriorly behind neck. Disk sparsely and evenly clothed with fine punctures, with microscopic punctures intermingled and becoming denser on median 1/3 of pronotum. A small puncture present on antescutellar area somewhat distant from margin.

Epipleural marginal stria weakly impressed on apical 1/2. Elytral marginal stria deeply impressed and complete, its apical end extended to lateral 2/3 of posterior margin of elytron. Epipleura even and sparsely clothed with microscopic punctures. Disk of elytra (Fig. 103A) sparsely and coarsely punctate except on a narrow band along suture, which is sparsely clothed with microscopic punctures and feebly elevated; on extreme apical band, the punctures becoming finer mediobasally, and coarser near oblique depression. Dorsal stria absent, but oblique depression present on lateral 1/2 on basal 1/3.

Propygidium sparsely covered with coarse, shallow and round punctures, which are separated by 1 – 4 times the diameter. Pygidium (Fig. 103C, D) sparsely and finely punctate, the punctures becoming coarser near basal margin. In female, a pair of curved sculptures present on apical 1/2 as shown in Fig. 103D. These female sculptures are found in the specimens from Okinawa, Ryûkyû Isles, but not in the specimens from Fukushima-ken, Honshû.

Anterior margin of prosternal lobe (Fig. 103B) truncated; anterior angles of the lobe round; marginal stria present at lateral 1/3 on basal 1/2, extending obliquely and inwardly; lateral margin of lobe strongly carinate and its inside deeply depressed near the posterior angles; disk irregularly scattered with fine and deep punctures, which are

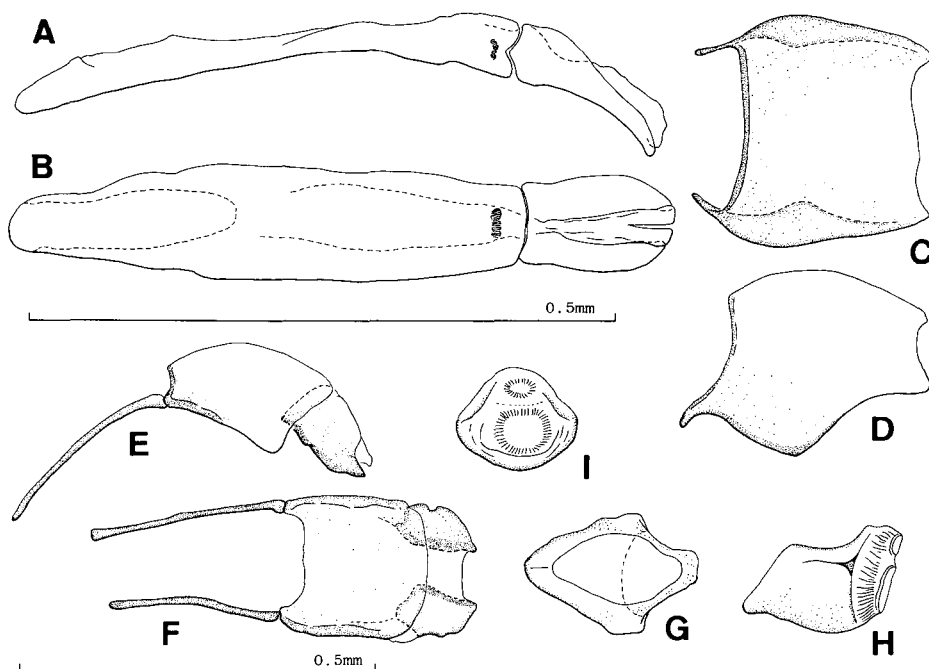


Fig. 105. *Platylomalus mendicus* (Lewis). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Male genitalia, 8th sternum, dorsal view. H: Ditto, lateral view. I: Ditto, caudal view.

Table 23. Biometric data of *Platylomalus mendicus* (Lewis).

APW	0.53-0.63	(0.60± 0.01)	20
PPW	1.04-1.26	(1.16± 0.01)	20
PL	0.59-0.71	(0.66± 0.01)	20
EL	1.02-1.30	(1.13± 0.01)	20
EW	1.14-1.34	(1.26± 0.01)	20
ProW	0.57-0.69	(0.63± 0.01)	20
ProL	0.20-0.28	(0.23±0.004)	20
PyL	0.20-0.30	(0.24± 0.01)	20
PTL	0.41-0.47	(0.44±0.004)	20
MSTL	0.30-0.39	(0.36± 0.01)	20
MTTL	0.37-0.49	(0.42± 0.01)	20

separated by 1 – 4 times the diameter. Prosternal process completely with carinal striae, which are divergent anteriorly and posteriorly, narrowest at basal 2/3, and not meeting at their ends. Lateral descending stria short, complete and strongly carinate.

Anterior margin of mesosternum (Fig. 103B) feebly emarginate at middle; its marginal stria absent anteriorly, complete laterally; basal end of the marginal stria bent inwards and apical end continued to lateral metasternal stria; punctuation of mesosternal disk similar to that of prosternal process; transverse stria weakly impressed, usually interrupted at middle (in the original description, the stria is absent). Meso-metasternal suture finely depressed. Intercostal disk of metasternum sparsely clothed with fine punctures which are separated by 3 – 8 times their diameter. Lateral disk sparsely covered with large, round and shallow punctures, which become finer apically. Lateral metasternal stria well impressed and extended obliquely and posteriorly, its apical end attaining to near metacoxal cavity. Post-mesocoxal stria extended along mesocoxal cavity and its outer end strongly bent posteriorly.

Intercostal disk of 1st abdominal sternum feebly depressed on lateral sides, and with punctuation similar to metasternal ones. First abdominal stria complete and well impressed.

Protibia with 4 denticles on outer margin. Metatibia with 4 spinules on outer margin. Metatibia with 2 spinules near the apex.

Male genitalia as shown in Fig. 105.

Specimens examined. [Honshû] Fukushima-ken: 13 exs., Kita-Aizu, Kuwabara, 15/iv/1950, T. Nakane (NA); 1♂, 12 exs., Kami-miyori, Kita-Aizu, 16/iv/1950, K. Nagayama (NA); 3 exs., Kawatani, Higashi-yama, Kita-Aizu, 24/x/1948, Y. Kurosawa (NA).

[Nansei Isles] Okinawa-Hontô Is. : 11 exs., Sueyoshi-kôen, Naha, 31/v/1988, T. Ueno. Ishigaki Is.: 1 ex., Kabira, 25/v/1988, H. Daidô.

Distribution. Japan (Honshû, Shikoku, Kyûshû, Oki Is., Nansei Isles); Russia (Primorskiy Kray); China; Viet-Nam; India; Taiwan; Indonesia.

Remarks. *Platylomalus mendicus* resembles *P. persimilis*; however, the different shape of the mesosternal transverse stria and the sculptures of the female pygidium will distinguish it from *P. persimilis*.

Platylomalus niponensis (Lewis, 1899)

(Fig. 106, 107, 108)

Paromalus complanatus: Lewis, 1892: 33, nec Panzer, 1797, corrected by Lewis, 1899: 21.

Paromalus niponensis Lewis, 1899: 21 [Japan]; Cooman, 1937: 142.

Platylomalus niponensis: Kryzhanovskij and Reichardt, 1976: 274; Mazur, 1984: 225; Hisamatsu, 1985b: 225 [photo].

Japanese name: Ô-chibi-hirata-emma-mushi.

Description. Male, Female. Body oblong, black and shining; tarsi and antennae rufopiceous. Body length, PPL, male, 2.52 – 3.17 mm (2.98 ± 0.04 , $n=17$), female, 2.65 – 3.01 mm (2.82 ± 0.04 , $n=9$), PEL, male, 2.19 – 2.91 mm (2.68 ± 0.04 , $n=17$), female, 2.45 – 2.68 mm (2.54 ± 0.03 , $n=8$). Width, male, 1.47 – 1.90 mm (1.76 ± 0.02 , $n=19$), female 1.60 – 1.77 mm (1.68 ± 0.02 , $n=9$). Biometric data are given in Table 24.

Head (Fig. 107C) evenly covered with moderate punctures which are separated by twice their diameter. Frontal stria well impressed and complete.

Sides of pronotum (Fig. 106A) arcuate, slightly convergent anteriorly on basal 3/4, thence strongly arcuate and convergent apically. Marginal stria nearly complete, but a little broken at middle. Disk of pronotum sparsely clothed with fine punctures which are separated by 4 – 6 times their diameter and become coarser on lateral 1/4. Antescutellar area distinctly with a short longitudinal impression.

Marginal epipleural stria feebly impressed on apical 1/2. Marginal elytral stria strongly carinate and complete, its apical end extending along the apical margin of elytron, and attaining to near lateral 2/3. Epipleura shining and microscopically punctate. Oblique humeral stria present on basal 1/4. First dorsal stria present on median 1/3, weakly impressed. Another oblique stria deeply impressed on laterobasal 1/2. Disk of elytra sparsely covered with coarse and shallow punctures which are separated by 1 – 4 times the diameter and become finer on mediobasal 1/2 and along the suture.

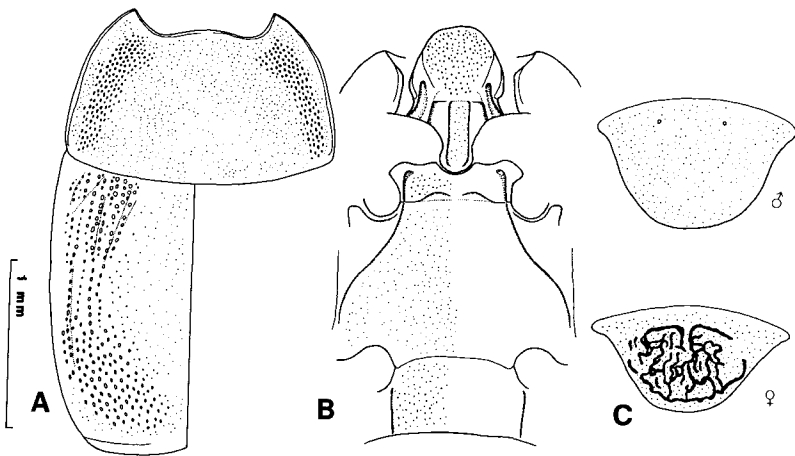


Fig. 106. *Platylomalus niponensis* (Lewis). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

Propygidium sparsely covered with moderate punctures, with fine punctures intermingled. The male and female are confused in the original description; in reality, the pygidium (Fig. 107C) is densely and finely punctate in the male; in female, it has an anastomosed sculpture medially (Fig. 107D).

Anterior margin of prosternal lobe (Fig. 106B) truncate and rather broad; marginal stria of the lobe absent anteriorly, but distinctly present on lateral 1/3; another short marginal stria on each lateral side and strongly carinate at basal angles of the lobe; disk sparsely and finely punctate, the punctures being separated by 2 – 5 times their diameter. Prosternal process with complete carinal striae; disk of the process sparsely and finely punctate; descending lateral stria short, strongly carinate.

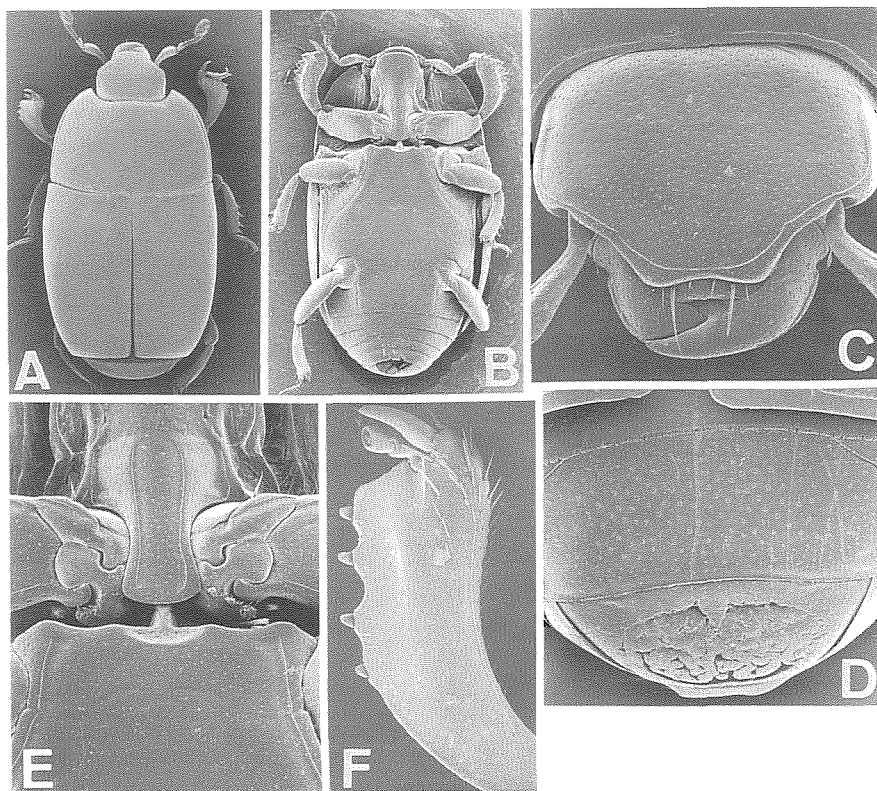


Fig. 107. *Platylomalus niponensis* (Lewis). A: Adult, dorsal view. B: Ditto, ventral view. C: Head, frontal view. D: Propygidium and pygidium. E: Pro-, meso- and metasterna, ventral view. F: Protibia, dorsal view.

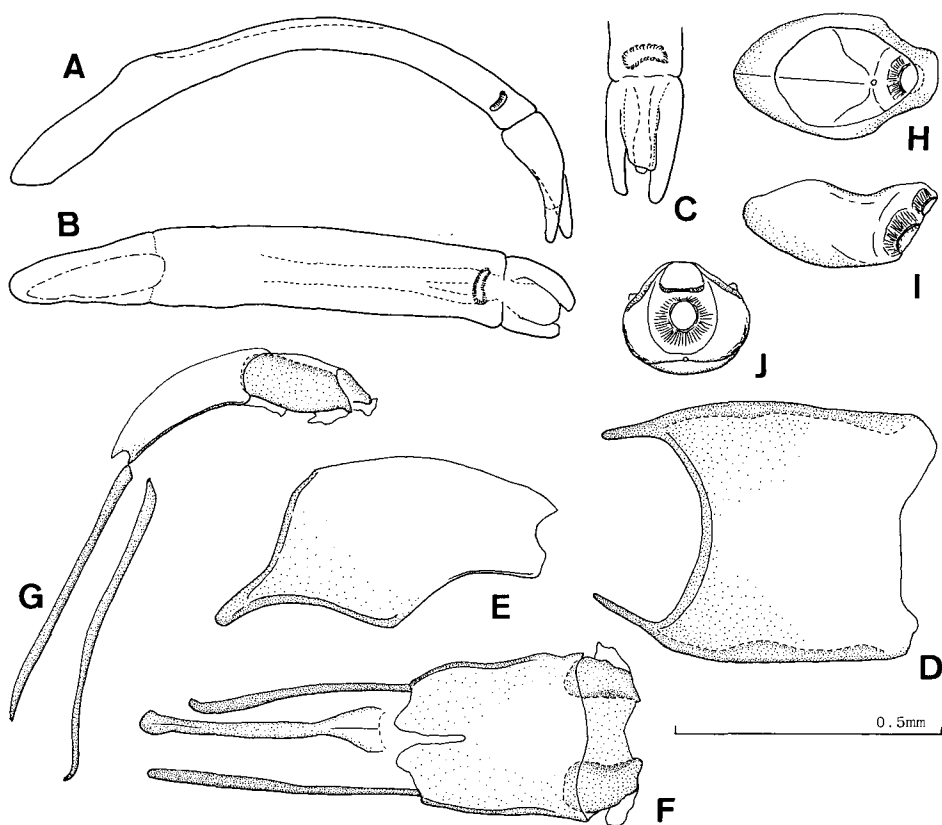


Fig. 108. *Platylomalus niponensis* (Lewis). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite, dorsal view. E: Ditto, lateral view. F: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. G: Ditto, lateral view. H: Male genitalia, 8th sternum, lateral view. I: Ditto, lateral view. J: Ditto, caudal view.

Table 24. Biometric data of *Platylomalus niponensis* (Lewis).

	Male	Female
APW	0.69-0.88 (0.83±0.01) 19	0.75-0.82 (0.79±0.01) 9
PPW	1.34-1.77 (1.66±0.02) 19	1.50-1.64 (1.57±0.01) 9
PL	0.78-1.01 (0.93±0.01) 19	0.78-0.92 (0.86±0.02) 8
EL	1.37-1.73 (1.60±0.02) 19	1.44-1.60 (1.54±0.02) 8
EW	1.47-1.90 (1.76±0.02) 19	1.60-1.77 (1.68±0.02) 9
ProW	0.72-1.01 (0.88±0.01) 19	0.82-1.01 (0.90±0.02) 8
ProL	0.23-0.39 (0.32±0.01) 19	0.29-0.33 (0.31±0.01) 8
PyL	0.33-0.49 (0.40±0.01) 19	0.29-0.43 (0.36±0.02) 8
PTL	0.52-0.72 (0.65±0.01) 19	0.56-0.62 (0.59±0.01) 9
MSTL	0.49-0.69 (0.59±0.01) 19	0.46-0.62 (0.54±0.01) 9
MTTL	0.59-0.78 (0.69±0.01) 19	0.56-0.69 (0.62±0.02) 9

Anterior margin of mesosternum deeply emarginate at middle, its marginal stria complete and carinate laterally, absent anteriorly; basal angles rectangular; disk evenly and sparsely clothed with fine punctures, which are separated by about 3 times their diameter, and indistinctly with a biarcuate transverse line (Fig. 106B). Meso-metasternal suture slightly impressed and broadly sinuous. Intercoxal disk of metasternum with punctures similar to those of metasternum. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly on basal 2/3, thence running along the metasternal-metepisternal suture, and attaining near the latero-posterior angle.

Intercoxal disk of 1st abdominal sternum sparsely and finely punctate, and completely striate on lateral side, the stria strongly carinate.

Protibia (Fig. 107F) with 6 denticles on outer margin. Mesotibia with 4 spinules on outer margin. Metatibia with 2 spinules near the apex.

Male genitalia as shown in Fig. 108.

Specimens examined. [Hokkaidô] 2♂♂ 3♀♀, Maruyama, Sapporo, 25/v, vi/1989, S. Shiyake; 4♂♂ 2♀♀, Ditto, 10, 11/v/1989, M. Ôhara; 1♂, 1 ex., Ditto, 5/v/1973, S. Kudô; 2♂♂, Mt. Yôtei, Hirafu, Kutchan, 15-16, 22/vii/1991, M. Ôhara.

[Honshû] Fukushima-ken: 1 ex., Naka-Moiwa, Azuma-yama, 13/iv/1966, K. Tazoe; 3 exs., Kami-miyori, Kita-Aizu, 16/iv/1950, K. Nagayama (NA); 5 exs., Kuwabara, Kita-Aizu, 15/iv/1950, Y. Kurosawa (NA); 4♂♂ 4♀♀, Ditto, (NSMT). Tôkyô-to: 2 exs., Takao, 14/vi/1930, S. Asahina. Nagano-ken: 1♂, Sanosaka, Hakuba Vill., 8/v/1983, M. Kiuchi.

Distribution. Japan (Hokkaidô, Honshû); Taiwan.

Remarks. *Platylomalus niponicus* is a relatively large species; it is similar to *P. persimilis* and *P. mendicus*, but can be distinguished by the different shape of the mesosternal transverse stria and the larger size.

Little is known about the habitat of this species. Some specimens were collected under bark.

Platylomalus persimilis (Lewis, 1888)
(Fig. 109, 110)

Paromalus persimilis Lewis, 1888: 641 [Tenasserium]; Cooman, 1937, 133 [Tonkin].

Platylomalus persimilis: Mazur, 1984: 136; Hisamatsu, 1985b: 224 [photo].

Japanese name: Kuro-chibi-hirata-emma-mushi.

Table 25. Biometric data of *Platylomalus persimilis* (Lewis).

	Male	Female
APW	0.63-0.69 (0.66± 0.01) 9	0.54-0.68 (0.60± 0.02) 6
PPW	1.08-1.28 (1.20± 0.02) 9	0.98-1.27 (1.10± 0.04) 6
PL	0.64-0.76 (0.71± 0.02) 9	0.56-0.73 (0.65± 0.02) 6
EL	1.08-1.27 (1.20± 0.02) 9	0.98-1.27 (1.09± 0.04) 6
EW	1.15-1.39 (1.28± 0.02) 9	1.03-1.37 (1.19± 0.05) 6
ProW	0.59-0.78 (0.72± 0.02) 9	0.61-0.71 (0.66± 0.02) 6
ProL	0.20-0.29 (0.25± 0.01) 9	0.15-0.27 (0.22± 0.01) 6
PyL	0.34-0.41 (0.36± 0.01) 9	0.24-0.29 (0.26± 0.01) 6
PTL	0.44-0.52 (0.48± 0.01) 9	0.37-0.49 (0.43± 0.02) 6
MSTL	0.37-0.49 (0.43± 0.01) 9	0.34-0.44 (0.39± 0.02) 6
MITL	0.47-0.59 (0.52± 0.01) 9	0.42-0.51 (0.46± 0.02) 6

Description. Body oblong, black and shining; femora, tarsi and antennae clear red brown. Body length, PPL, male, 2.03 – 2.50 mm (2.31 ± 0.06 , n=9), female, 1.76 – 2.35 mm (2.05 ± 0.08 , n=6); PEL, male, 1.79 – 2.25 mm (2.04 ± 0.05 , n=9), female, 1.64 – 2.11 mm (1.87 ± 0.08 , n=6). Width, male, 1.15 – 1.39 mm (1.28 ± 0.02 , n=9), female, 1.03 – 1.37 mm (1.19 ± 0.05 , n=6). Biometric data are given in Table 25.

Frontal stria of head clearly impressed and complete; disk of head evenly and finely punctate, the punctures being separated by about twice their diameter.

Pronotal sides (Fig. 109A) slightly arcuate and convergent forward. Apical angles acute. Emarginated portion of apical margin bisinuated behind neck. Marginal stria complete laterally and rather broadly interrupted medially on anterior margin. Disk of pronotum evenly clothed with fine and deep punctures, which are separated by 3 – 5 times their diameter.

Epipleural marginal stria present on apical 1/2. Elytral marginal stria deeply impressed, densely crenate and complete, its apical end extending along the apical margin of elytron and attaining to lateral 1/2. Epipleura impunctate and shining. Disk of elytra sparsely covered with coarse and deep punctures; the punctures 3 times as coarse as those of pronotum, separated by 2 – 5 times their diameter and becoming coarser laterobasally, and becoming finer narrowly along the suture and on extreme apical band.

Propygidium sparsely and coarsely punctate, the punctures becoming finer and denser basally. Pygidium (Fig. 109C) convex, and sparsely clothed with fine punctures which are separated by about 3 times their diameter in the male. In female, pygidium with a large ocelloid sculpture, which is very deep, usually with several short foveae around.

Anterior margin of prosternal lobe (Fig. 109B) truncate, its median portion broadly straight. Marginal stria of lobe absent anteriorly and present on basal 1/2 of lateral 1/3; another short marginal stria present on each posterior angle and strongly carinate. Disk of the lobe sparsely covered with fine punctures which are separated by 2 – 4 times their diameter. Prosternal process completely with carinal striae, the striae

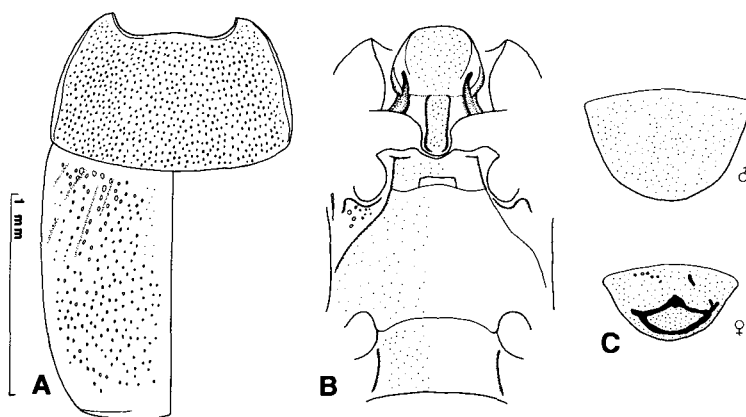


Fig. 109. *Platylomalus persimilis* (Lewis). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

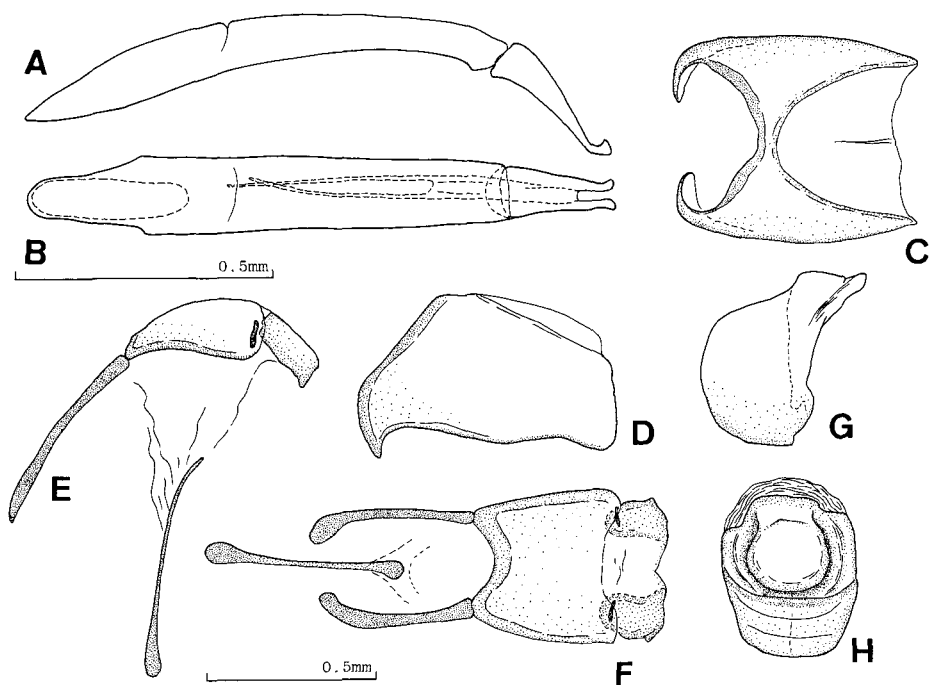


Fig. 110. *Platyomalus persimilis* (Lewis) A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Ditto, lateral view. G: Male genitalia, 8th sternum, lateral view. H: Ditto, caudal view.

being well impressed; disk sparsely and finely punctate. Descending lateral stria short and strongly carinate.

Anterior margin of mesosternum strongly emarginate medially, its marginal stria absent anteriorly and complete and well impressed laterally, the basal end of the stria rectangular inwards, and the apical end continued to the metasternal lateral stria; disk of mesosternum densely clothed with fine punctures except for an inside area surrounded by a transverse stria and a meso-metasternal suture; transverse stria (Fig. 109B) rather strongly carinate. Meso-metasternal suture slightly impressed and complete. Intercoxal disk of metasternum sparsely clothed with fine punctures which are separated by 4 – 6 times their diameter and become sparser laterally. Lateral disk of metasternum sparsely covered with coarse punctures and with postcoxal stria which runs along the mesocoxal cavity and strongly sinuates near the lateral end. Lateral metasternal stria deeply impressed, extending posteriorly and obliquely on basal 2/3, thence running along suture between metasternum and metepisternum, and its apical end attaining to near metacoxa and curved inwardly.

Intercoxal disk of 1st abdominal sternum sparsely and finely punctate and 1st abdominal stria present on each lateral side.

Protibia with 5 denticles on outer margin. Mesotibia with 4 spinules on outer margin. Metatibia with 1 spinule near apex.

Male genitalia as shown in Fig. 110.

Specimens examined. [Nansei Isles] Tokara-Nakano-shima Is.: 4♂♂ 2♀♀, Nakano-shima Is., Tokara Isles, 18/vii/1982, M. Ôhara. Yoron Is.: 1♀, Yoron Is., 5/ix/1988, Y. Kusui. Okinawa-Hontô

Is.: 1♂, Yona, 13-15/vi/1970, H. Makihara. Kerama Is.: 1♂ 1♀, Aka, Kerama, 2/viii/1987, Y. Kusui. Ishigaki Is.: 1♂, Mt. Banna-dake, 20/ii/1982, K. Sawada; 1 ex., Ditto, 31/x/1974, K. Tazoe.

Distribution. Japan (Nansei Isles); Tenasserim; Viet-Nam.

Remarks. *Platylomalus persimilis* is very similar to *P. mendicus*, but differs by the black body, the trapezoid transverse stria of the mesosternum and the mesotibia bearing 1 spine.

Platylomalus viaticus Lewis, 1892

(Fig. 111, 112, 113)

Paromalus viaticus Lewis, 1892a: 33 [Japan: Nikkō, Oyama, Kashiwagi, Nara, Kumamoto, and Yuyama, chiefly in the warmer districts of the islands].

Platylomalus viaticus: Kryzhanovskij and Reichardt, 1976: 275; Mazur, 1984: 136; Hisamatsu, 1985b: 224 [photo].

Japanese name: Tsuya-chibi-hirata-emma-mushi.

Description. Male and female. Body oblong, black and shining; femora, tarsi, mouthparts and antennae rufopiceous. Body length, PPL, male, 1.64 – 1.91 mm (1.79 ± 0.03 , n=9), female, 1.49 – 1.77 mm (1.63 ± 0.06 , n=5); PEL, male, 1.52 – 1.72 mm (1.64 ± 0.02 , n=9), female, 1.45 – 1.64 mm (1.54 ± 0.03 , n=4). Width, male, 0.95 – 1.13 mm (1.05 ± 0.02 , n=9), female, 0.95 – 1.08 mm (1.02 ± 0.03 , n=5). Biometric data are given in Table 26.

Head (Fig. 112D) densely covered with coarse punctures which are separated by 0.5 – 1 times the diameter, with microscopic punctures intermingled. Frontal stria complete and feebly carinate.

Pronotal sides (Fig. 111A) slightly arcuate and convergent apically. Emarginated portion of apical margin bisinuate behind neck. Marginal stria complete laterally and anteriorly. Disk of pronotum densely covered with coarse and somewhat oblong punctures which are somewhat coarser than those of the head. Antescutellar area without a large puncture.

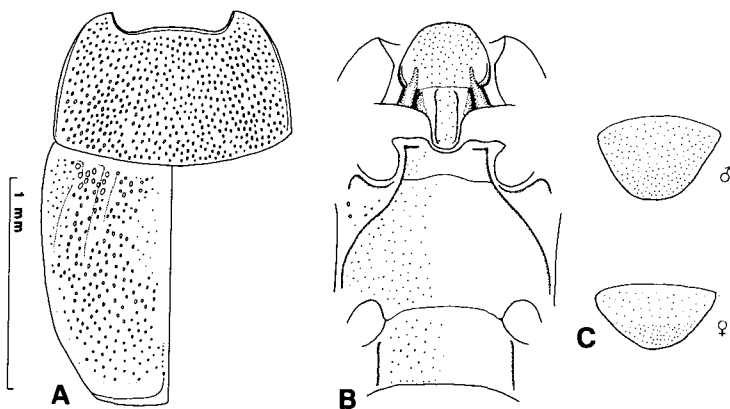


Fig. 111. *Platylomalus viaticus* (Lewis). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

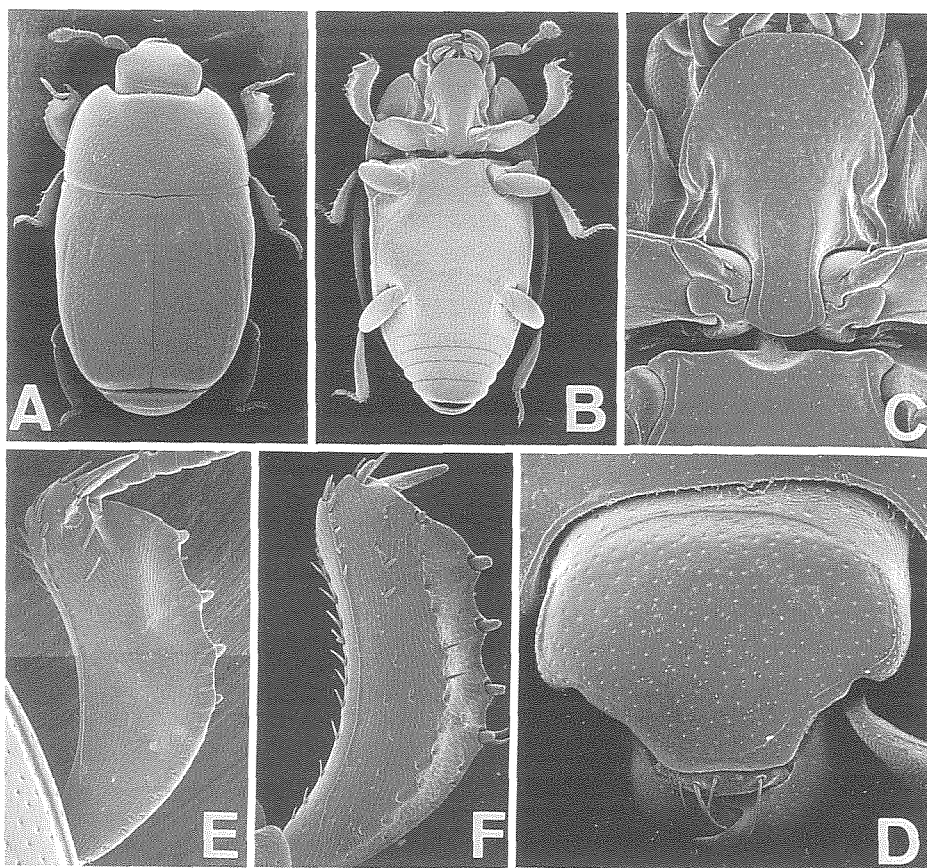


Fig. 112. *Platylomalus viaticus* (Lewis). A: Adult, dorsal view. B: Ditto, ventral view. C: Prosternum, ventral view. D: Head, frontal view. E: Protibia, dorsal view. F: Ditto, ventral view.

Epipleural stria weakly impressed on apical 1/2. Marginal elytral stria deeply impressed and complete, coarsely punctate inside; the apical end of the stria extending along apical margin of elytron, through apical sutural angle, and shortly extending anteriorly. All dorsal striae indistinct, but feeble oblique depressions present on laterobasal 1/2 of elytron. Punctuation of elytra (Fig. 111A) similar to pronotal one, but much coarser and sparser except on a narrow band along suture and on extreme apex of elytra, the punctures becoming finer mediobasally and coarser around the oblique depression.

Propygidium densely and moderately punctate, the punctures becoming sparser and finer laterally. Pygidium evenly clothed with fine punctures which are separated by 3 – 5 times their diameter and become a little denser on apical 1/3. In female, the punctuation of pygidium becoming much denser on apical 1/3 and sometimes with a transverse depression near apex.

Anterior margin of prosternal lobe (Fig. 111B, 112C) truncate; marginal stria

shortly impressed only near posterior angle and carinate; disk sparsely covered with moderate punctures, which are separated by 2 – 5 times their diameter. Prosternal process with complete carinal striae; disk scattered with moderate punctures which are separated by 2 – 10 times their diameter. Descending lateral stria short, complete and strongly carinate.

Anterior margin of mesosternum (Fig. 111B) deeply emarginate at middle, its marginal stria absent anteriorly, but complete and well impressed laterally; apical end of the marginal stria continued to basal end of lateral metasternal stria; disk sparsely clothed with fine punctures which are separated by 3 times their diameter; transverse stria absent. Intercoxal disk of metasternum similar to punctuation of mesosternum, the punctures becoming a little coarser laterally; lateral stria well impressed, extending obliquely and posteriorly, running along mesosternal-metepisternal suture on apical 1/2, its apical end attaining near metacoxal cavity; lateral disk of metasternum sparsely and coarsely punctate. Postcoxal stria extending along mesocoxal cavity, its outer end strongly bent posteriorly.

Intercoxal disk of 1st abdominal sternum sparsely and moderately punctate; 1st abdominal stria straight, well impressed and complete.

Protibia (Fig. 112E, F) with 4 denticles on outer margin. Mesotibia with 3 spinules on outer margin. Metatibia with a spinule near apex.

Male genitalia: as shown in Fig. 113.

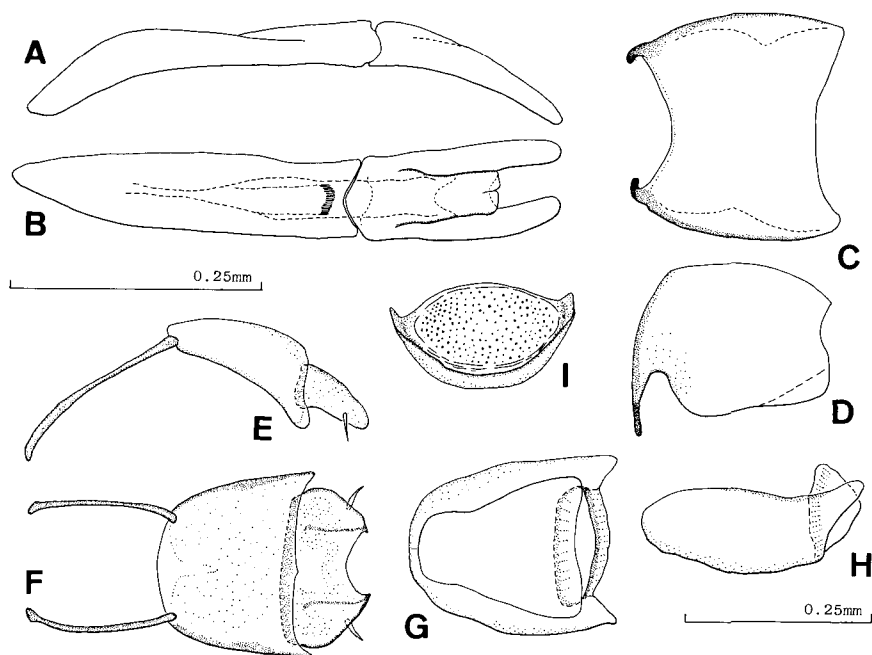


Fig. 113. *Platylomalus viaticus* (Lewis). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, lateral view. F: Ditto, dorsal view. G: Male genitalia, 8th sternum, dorsal view. H: Ditto, lateral view. I: Ditto, caudal view.

Table 26. Biometric data of *Platylomalus viaticus* (Lewis).

	Male	Female
APW	0.47-0.57 (0.53± 0.01) 9	0.46-0.54 (0.50± 0.02) 5
PPW	0.90-1.01 (0.97± 0.02) 9	0.81-1.00 (0.90± 0.03) 5
PL	0.51-0.61 (0.56± 0.01) 9	0.47-0.56 (0.53± 0.01) 5
EL	0.91-1.08 (0.99± 0.02) 9	0.86-0.98 (0.91± 0.02) 5
EW	0.95-1.13 (1.05± 0.02) 9	0.95-1.08 (1.02± 0.03) 5
ProW	0.46-0.56 (0.50± 0.01) 9	0.42-0.59 (0.50± 0.03) 5
ProL	0.10-0.15 (0.13±0.003) 9	0.14-0.15 (0.14±0.004) 5
PyL	0.17-0.27 (0.23± 0.01) 9	0.17-0.25 (0.21± 0.01) 5
PTL	0.35-0.44 (0.38± 0.01) 9	0.34-0.37 (0.36± 0.01) 5
MSTL	0.29-0.42 (0.34± 0.01) 9	0.29-0.34 (0.31± 0.01) 5
MITL	0.37-0.42 (0.40± 0.01) 8	0.35-0.42 (0.40± 0.01) 5

Specimens examined. [Honshû] Aomori-ken: 1 ex., Mt. Osore, Shimokita, 31/vii/1956, T. Nakane (NA). Fukushima-ken: 1♂, Araumi, Minami-Aizu, 9/v/1948, K. Nagayama (NA); 1 ex., Ashinohara, Egawa, Minami-Aizu, 18/v/1948, Y. Kurosawa (NA); 1 ex., Yunohana, Tateiwa, Minami-Aizu, 9/viii/1948, Y. Kurosawa (NA). 1♀, nr. Oyama, nr. Wakamatsu, Aizu, 14/v/1947, Y. Kurosawa (NA); 1♂, Suimon, Ômaki, Asahida V., Minami-Aizu, 20/v/1948, Y. Kurosawa (NA). Saitama-ken: 1 ex., Yanagi-Koya, Chichibu, 22/vii/1933, S. Asahina (NA). Nara-ken: 3 exs., Kasuga, Nara, 19/vi/1957, 13/vi/1958, T. Nakane (NA); 1 ex., Ditto, 30/iv/1950, N. Yato (NA); 1♂, Nara Park, Nara-shi, 7/x/1987, K. Sawada. Hyôgo-ken: 1♂, Hataganaru, 24/v/1955, T. Nakane (NA).

[Izu Isles] Hachijô-jima Is.: 1 ex., Suigenchi, Hachijô-jima, 26/vi/1958, K. Mizusawa (NA).

[Kyûshû] Fukuoka-ken: 1♂ 1♀, Mt. Hiko-san, 23/x/1985, M. Ôhara.

[Taiwan] 2 exs., Karapin, near Mt. Ari [now Ali Shan], 1/v/1941, Y. Yano (NA).

Distribution. Japan (Honshû, Kyûshû); Taiwan; Russia (Chabarovskiy Kray).
New to Kyûshû.

Remarks. *Platylomalus viaticus* can easily be distinguished from *P. fujisanus* by the absence of a transverse stria on the mesosternum and the absence of furrows on the female pygidium. Lewis (1892) described sexual dimorphism in the state of the pygidium, but he confused the sexes.

Platylomalus kusuii M. Ôhara, sp. nov.
(Fig. 114, 115)

Japanese name: Ogasawara-chibi-hirata-emma-mushi.

Description. Body oblong, black and shining; femora, tarsi, mouthparts and antennae red brown. Body length, PPL, female, 2.09 – 2.60 mm (2.34 ± 0.08 , n=6); PEL, male, 1.99 mm, female, 1.89 – 2.36 mm (2.11 ± 0.06 , n=7). Width, male, 1.26 mm, female, 1.20 – 1.50 mm (1.35 ± 0.04 , n=7). Biometric data are given in Table 27.

Frontal stria of head clearly impressed and complete; disk of head sparsely and finely punctate, the punctures being separated by 2 – 5 times their diameter.

Pronotal sides (Fig. 114A) slightly arcuate and convergent to apical 1/4, thence strongly convergent apically. Emarginated portion of apical margin bisinuate behind neck. Marginal pronotal stria complete, but shortly interrupted at middle on anterior margin. Disk of pronotum densely clothed with microscopic punctures, which become sparser and coarser on lateral 1/3 and are separated by 2 – 3 times their diameter. Antiscutellum area with a large puncture.

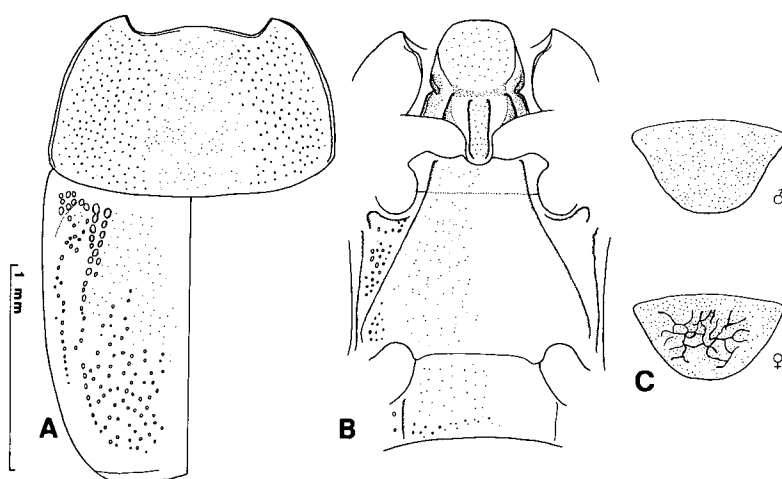


Fig. 114. *Platylomalus kusuii* sp. nov. A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

Epipleural marginal stria present on apical 2/3. Elytral marginal stria deeply impressed, coarsely crenate and complete, its apical end extending along the apical margin of elytron and attaining to lateral 3/4. Epipleura shining and sparsely clothed with fine punctures. Disk of elytra (Fig. 114A) sparsely covered with moderate punctures; the punctures separated by 2 or 3 times their diameter, becoming denser and finer on apical 1/2 narrowly along the suture, and becoming coarser broadly on apical 1/3 of elytron and narrowly around an oblique depression which is present on the laterobasal 1/2 of the elytron; the punctation around the oblique depression very large, round and deep; extreme apical band impunctate. Dorsal striae of elytron absent, but a rudimentary impression (2nd dorsal stria ?) present on apical 2/3 of lateral 1/3 and another one (3rd ?) on basal 1/2 of lateral 1/2.

Propygidium evenly and coarsely punctate, the punctures being separated by about 1.5 (1 – 2) times the diameter. Pygidium (Fig. 114C) densely clothed with fine punctures which are separated by about 1.5 (1 – 2) times the diameter. In female, pygidium with punctation similar to that of the male and also with an irregular and liner sculpture (Fig. 114C).

Anterior margin of prosternal lobe (Fig. 114B) truncate; marginal stria of the lobe absent anteriorly and present laterally on median 1/3; disk evenly covered with deep and moderate punctures which are separated by about 1.5 (1 – 2) times the diameter. Prosternal process completely with carinal striae, which are well impressed and feebly sinuate at middle, sometimes reduced basally; disk of the process sparsely clothed with fine punctures which are separated by 2 – 4 times their diameter. Descending lateral stria short and strongly carinate; outside area of the stria deeply depressed.

Anterior margin of mesosternum (Fig. 114B) feebly emarginate medially, its marginal stria absent anteriorly, and complete and well impressed laterally; the basal end of the stria hooked inward; the apical end continued to metasternal stria; disk of the metasternum sparsely with fine punctures which are separated by 3 – 5 times their diameter, and with microscopic punctures sparsely intermingled. Meso-metasternal

suture weakly impressed and feebly arcuate. Punctuation of intercoxal disk of metasternum a little denser and finer than mesosternal ones, and the fine punctures being usually represented in pairs; lateral disk sparsely covered with large, round and shallow punctures, which become smaller and sparser; lateral metasternal stria deeply impressed, extending obliquely and outwardly, and reaching near the posterior coxal cavity; postmesocoxal stria well impressed, extending along basal margin and its lateral end strongly bent posteriorly.

Punctuation of 1st abdominal sternum similar to that of metasternum, the punctures becoming coarser before apical angles; 1st abdominal stria complete on each lateral side.

Protibia with 4 denticles on outer margin. Metatibia with 5 spinules on outer margin, but the basalmost very small. Metatibia with 2 spinules near apex.

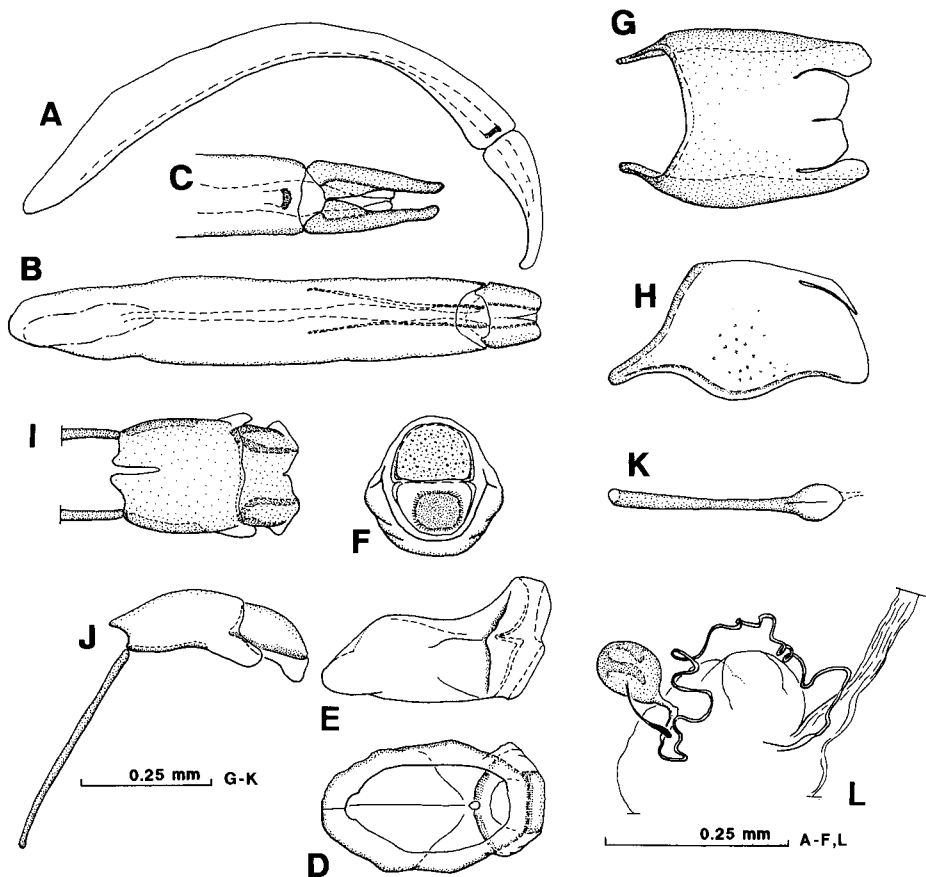


Fig. 115. *Platylomalus kusuii* sp. nov. A – K: Male genitalia. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Apex of aedeagus, caudal view. D: 8th sternum, dorsal view. E: Ditto, lateral view. F: Ditto, caudal view. G: 8th tergite, dorsal view. H: Ditto, lateral view. I: 9th and 10th tergites, dorsal view. J: Ditto, lateral view. K: 9th sternum (spicule), dorsal view. L: Female genitalia, spermatheca.

Table 27. Biometric data of *Platylomalus kusuii* M. Ôhara, sp. nov.

	Male (n=1)	Female
APW	0.61	0.59-0.71 (0.66± 0.02) 7
PPW	1.24	1.16-1.42 (1.28± 0.04) 7
PL	0.75	0.63-0.89 (0.76± 0.04) 7
EL	1.14	1.10-1.36 (1.23± 0.04) 7
EW	1.26	1.20-1.50 (1.35± 0.04) 7
ProW	0.63	0.61-0.75 (0.68± 0.02) 6
ProL	0.26	0.22-0.30 (0.25± 0.01) 6
PyL	0.32	0.22-0.32 (0.28± 0.01) 6
PTL	0.47	0.43-0.53 (0.49± 0.01) 7
MSTL	0.43	0.33-0.47 (0.43± 0.02) 7
MTIL	0.47	0.45-0.57 (0.52± 0.02) 7

Male genitalia: as shown in Fig. 115A – K.

Female genitalia: as shown in Fig. 115L

Specimens examined. Holotype, ♂, Sakai-ura, Chichi-jima Is., Ogasawara Isles, 8/vi/1972, Y. Kusui (EIHU).

Paratypes. [Ogasawara Isles] 1 ♀, Nishi-ura, Haha-jima Is., 15/vi/1972, Y. Kusui; 1♂3 ♀♀, and 4 exs., Nakano-taira, Haha-jima Is., 29/vi/1976, Y. Kurosawa (NSMT); 1 ex., Bonin Is., no date, M. Nishihara; 1 ex., Bonin Is., vi/1969, T. Nakane (NA); 1 ♀, Wai beach, Haha-jima Is., 22/v/1989, S. Miyano (Collection of Natural History Museum and Institute, Chiba)

Distribution. Japan (Ogasawara Isles).

Remarks. *Platylomalus kusuii* can easily be distinguished by the characteristic large punctuation on the humeral area of the elytra and the absence of a transverse stria on the mesosternum, in combination with its limited distribution (Ogasawara Isles).

GENUS PACHYLOMALUS SCHMIDT, 1879

Pachylomalus Schmidt, 1897: 295 [type species: *Paromalus leo* Marseul, 1879: 272, designated by Bickhardt, 1917: 115]; Bickhardt, 1917: 115.

SUBGENUS CANIDIUS COOMAN, 1941

Canidius Cooman, 1941: 292 [type species: *Pachylomalus opulentus* Cooman, 1932: 65, originally designated].

Pachylomalus (Canidius) musculus (Marseul, 1873) (Fig. 116, 117, 118)

Paromalus musculus Marseul, 1873: 221, 225 [Nippon, Nangasaki]; Lewis, 1892a: 37 [Nara, Kiushu]; 1915: 56 [Formosa].

Pachylomalus musculus: Bickhardt, 1917: 116; Hisamatsu, 1985b: 224, pl. 40, no. 25.

Pachylomalus (Canidius) musculus: Cooman, 1941: 298, fig. 6; Hisamatsu, 1968: 31 [Shikoku, Ryûkyû].

Pachylomalus inops Cooman, 1933: 195, synonymized by Cooman, 1935: 217.

Japanese name: Hasuji-chibi-hirata-emma-mushi.

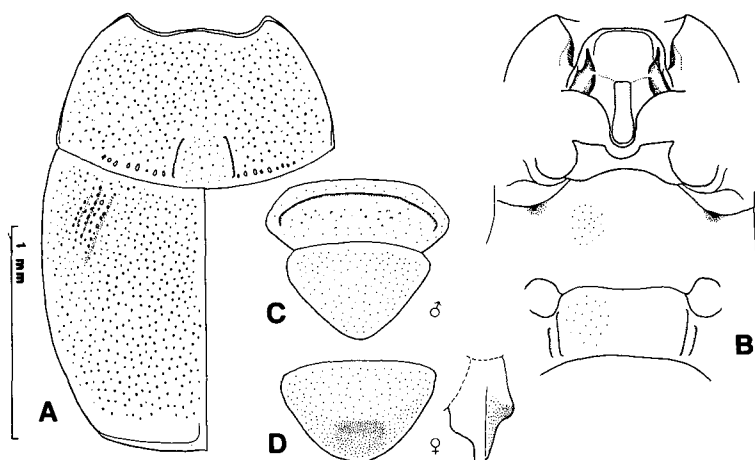


Fig. 116. *Pachylomalus (Canidius) musculus* (Marseul). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Propygidium and pygidium, male. D: Pygidium, female, caudal (left) and lateral views.

Description. Body length, PPL, 2.08 – 2.57 mm (2.33 ± 0.04 , $n=20$), PEL, 1.79 – 2.38 mm (2.13 ± 0.04 , $n=20$). Width, 1.27 – 1.72 mm (1.52 ± 0.03 , $n=20$). Biological data are given in Table 28. Body oblong-oval, black or dark brown and shining; tibiae, mouthparts and antennae rufopiceous.

Frontal stria of head weakly carinate and complete; disk sparsely clothed with fine punctures which are separated by 3 – 4 times their diameter; interspace among the punctures shining.

Pronotal sides (Fig. 116A) arcuate and strongly convergent apically; anterior angles acute. Emarginated portion of anterior margin bisinuate. Marginal stria complete, weakly impressed. Disk of pronotum convex, sparsely clothed with fine punctures similar to the pronotal ones; a pair of divergent striae present on mediobasal 1/3, area between the striae feebly depressed. Basal margin of pronotum sparsely covered with large punctures, but absent medially.

Epipleural marginal stria weakly impressed and interrupted on mediobasal 1/4, sometimes complete. Epipleura shining, sparsely clothed with microscopic punctures. Elytral marginal stria deeply impressed and complete, its apical end extending along apical margin of elytron, attaining to sutural angle, then bent inward, shortly extending anteriorly. Disk of elytra evenly covered with coarse punctures which are separated by 3 – 4 times their diameter. Extreme apical band impunctate. Oblique humeral stria slightly impressed on basal 1/3.

Propygidium (Fig. 116C) distinctly with a transverse stria which is well impressed; the lateral end of the stria not attaining to lateral margin; disk sparsely and finely punctate, the punctures being separated by 3 – 4 times their diameter. Pygidium (Fig. 116C, D) with punctation similar to that of propygidium. In female, punctation of pygidium as in male; surface with a large oval depression on apical 1/2.

Anterior margin of prosternal lobe (Fig. 117B) truncate, its marginal stria well impressed and strongly and inwardly bent laterally; basal angle shortly carinate, of

which the inside area is strongly and obliquely excavated; disk of lobe covered with alutaceous ground sculpture and microscopic punctures which are separated by nearly 3 times their diameter. Prosternal keel narrow, its top even; disk impunctate, shining; carinal striae well impressed, divergent basally, and its apical ends united with each other in an arc. Descending lateral stria deeply impressed.

Anterior margin of mesosternum strongly and deeply emarginate medially, marginal stria absent; basal angles depressed; disk of mesosternum shining and sparsely

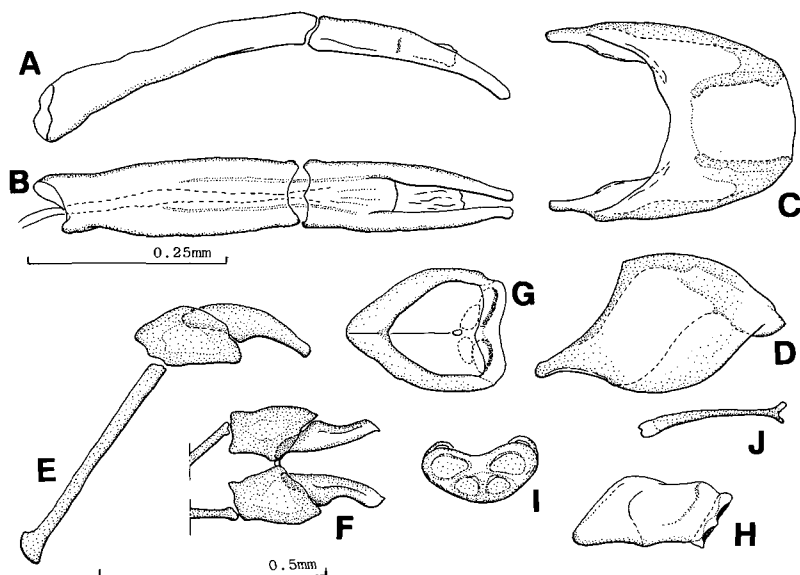


Fig. 117. *Pachylomalus (Canidius) musculus* (Marseul). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, lateral view. F: Ditto, dorsal view. G: Male genitalia, 8th sternum, dorsal view. H: Ditto, lateral view. I: Ditto, caudal view. J: Male genitalia, 9th sternum (spicule), dorsal view.

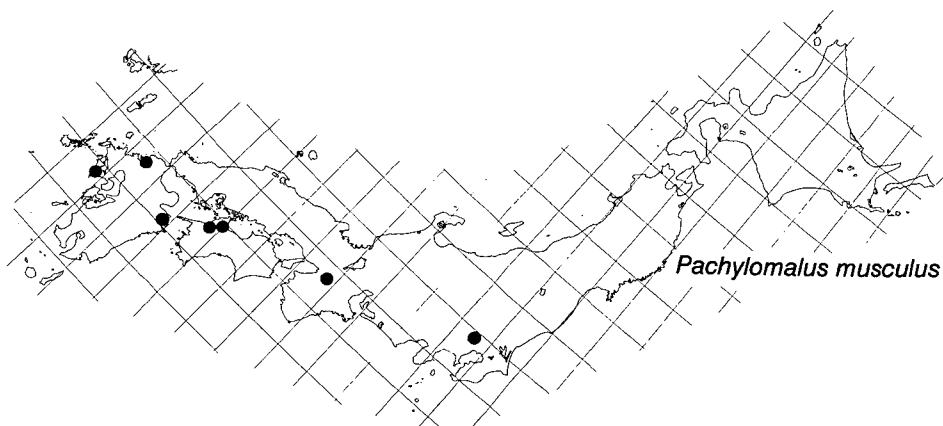


Fig. 118. Collection sites of *Pachylomalus (Canidius) musculus* (Marseul) in Japan.

Table 28. Biometric data of *Pachylomalus musculus* (Marseul).

APW	0.56-0.71	(0.66± 0.01)	20
PPW	1.20-1.52	(1.35± 0.02)	20
PL	0.66-0.83	(0.76± 0.01)	20
EL	1.10-1.47	(1.27± 0.02)	20
EW	1.27-1.72	(1.52± 0.03)	20
ProW	0.61-0.83	(0.73± 0.01)	20
ProL	0.25-0.29	(0.27±0.004)	20
PyL	0.27-0.44	(0.36± 0.01)	20
PTL	0.42-0.56	(0.50± 0.01)	20
MSTL	0.42-0.54	(0.47± 0.01)	19
MTTL	0.44-0.61	(0.54± 0.01)	20

clothed with microscopic punctures. Meso-metasternal suture strongly carinate and anteriorly arcuate medially, its lateral end continued to lateral metasternal stria. Disk of metasternum strongly shining, and evenly and finely punctate, the punctures being separated by 4 – 5 times their diameter and becoming sparser laterally. Lateral metasternal stria strongly carinate, impressed along mesocoxal cavity, its lateral end attaining to basal 1/3 of metepisternal-metasternal suture. A deep fovea present near lateral 1/2 of the lateral metasternal stria. Lateral disk of metasternum with transverse, alutaceous and microscopic ground sculptures and fine punctures. Mesocoxal stria well impressed, extending along the mesocoxal cavity and posteriorly bent on lateral 1/4 of lateral metasternal disk.

Intercostal disk of 1st abdominal sternum sparsely and microscopically punctate, with 2 striae on each lateral side.

Protibia dilated, with 4 denticles on outer margin. Meso- and metatibiae somewhat dilated.

Male genitalia as shown in Fig. 117.

Specimens examined. [Honshû] Saitama-ken: 1♂, Urawa, 10/vi/1954, no collector's name (NA). Nara-ken: 1♂, Kasuga, 19/i/1958, T. Shibata (NA).

[Shikoku] Tokushima-ken: 1♀, Kuhina-mura, 20/vii/1953, M. Hirai (NA). Ehime-ken: 1♀, Shiroyama, Matsuyama, 24/v/1949, T. Yano (NA); 1 ex., Kurokawa, Ishizuchi, 2/vi/1952, N. Yato (NA).

[Kyûshû] Fukuoka-ken: 47♂♂ 35♀♀, Mt. Tachibana, Fukuoka, 24/ix, 23/x/1983, 24/v, 6/vi, 25/vii/1984, S. Nomura; 12♂♂ 6♀♀, Kashigû, 8, 15/ix/1983, S. Nomura; 2 exs., Kane-no-Misaki, Fukuoka, 1/xi/1978, Y. Takakura. Nagasaki-ken: 24♂♂ 6♀♀, Suwa Shrine, Nagasaki-shi, 9/vi/1983, S. Nomura. Ôita-ken: 1♀, Saeki, 20/vii/1953, K. Kurosa (NA).

Distribution (Fig. 118). Japan (Honshû, Shikoku, Kyûshû, Tokara Isles); Taiwan; Burma; Viet-Nam.

Remarks. Being the only Japanese representative of the genus, *P. musculus* can easily be recognized by the generic characteristics.

Little is known about the habitat of this species. Some specimens were collected in the litter of forests.

GENUS EULOMALUS COOMAN, 1937

Eulomalus Cooman, 1937: 97 [type species: *Eulomalus vermicipygus* Cooman, 1937: 98, originally designated].

The Japanese species included in the genus *Eulomalus* have not been sufficiently studied. Probably 3 or more species occur in Japan. In this paper, the known Japanese species are only listed.

Eulomalus lombokanus Cooman, 1937

Eulomalus lombokanus Cooman, 1937: 104 [Lombok]; Mazur, 1984: 137; Hisamatsu, 1985b: 225 [photo].

Japanese name: Mizo-chibi-hirata-emma-mushi.

Distribution. Japan (Nansei Isles); Lombok Is.

Eulomalus tardipes (Lewis, 1892)

Paromalus tardipes Lewis, 1892: 35 [Japan: Honshû].

Eulomalus tardipes: Mazur, 1984: 138; Hisamatsu, 1985b: 225 [photo].

Japanese name: Chairo-chibi-hirata-emma-mushi.

Distribution. Japan (Nansei Isles); Lombok Is.

GENUS *PAROMALUS* ERICHSON, 1834

Paromalus Erichson, 1834: 167 [type species: *Hister flavicornis* Herbst, 1792: 40, designated by Westwood, 1840: 22].

Microlomalus Lewis, 1907a: 318, synonymized by Cooman, 1948: 133. [type species: *Hister flavicornis* Herbst, 1792: 40].

Key to the Japanese species of the genus *Paromalus*

- 1(2) Apical end of marginal elytral stria extending to suture of elytron, and curved at medio-posterior angle of elytron, then extending anteriorly. *P. parallelepipedus* (Herbst, 1792)
- 2(1) Apical end of marginal elytral stria not attaining to medio-apical angle of elytron.
..... *P. vernalis* Lewis, 1982

Another species, *Paromalus omineus* Lewis, 1892, occurs in Japan.

SUBGENUS *PAROMALUS* ERICHSON, 1834

Paromalus (*Paromalus*) *omineus* Lewis, 1892

Paromalus omineus Lewis, 1892a: 36 [Japan: Ominesan]; Mazur, 1984: 139; Hisamatsu, 1985b: 225.

Micromalus omineus: Lewis, 1907a: 318

Japanese name: Aka-chibi-hirata-emma-mushi.

Specimens examined. No specimen is available in this study.

Distribution. Japan (Honshû); Bhutan ?

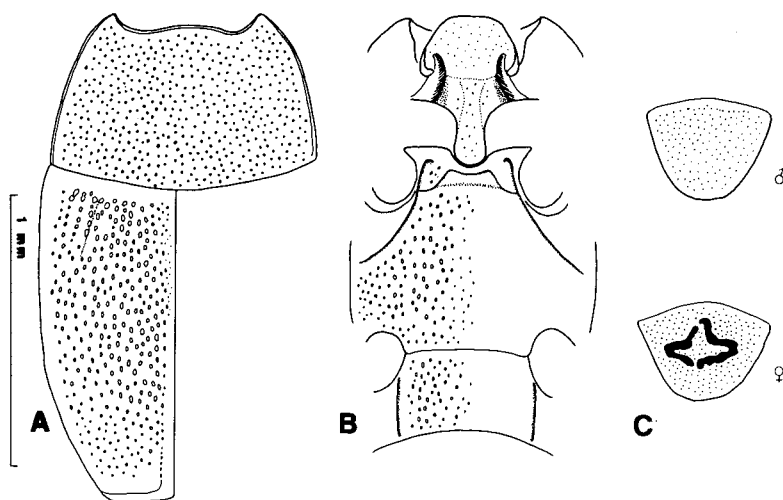


Fig. 119. *Paromalus parallelepipedus* (Herbst). A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

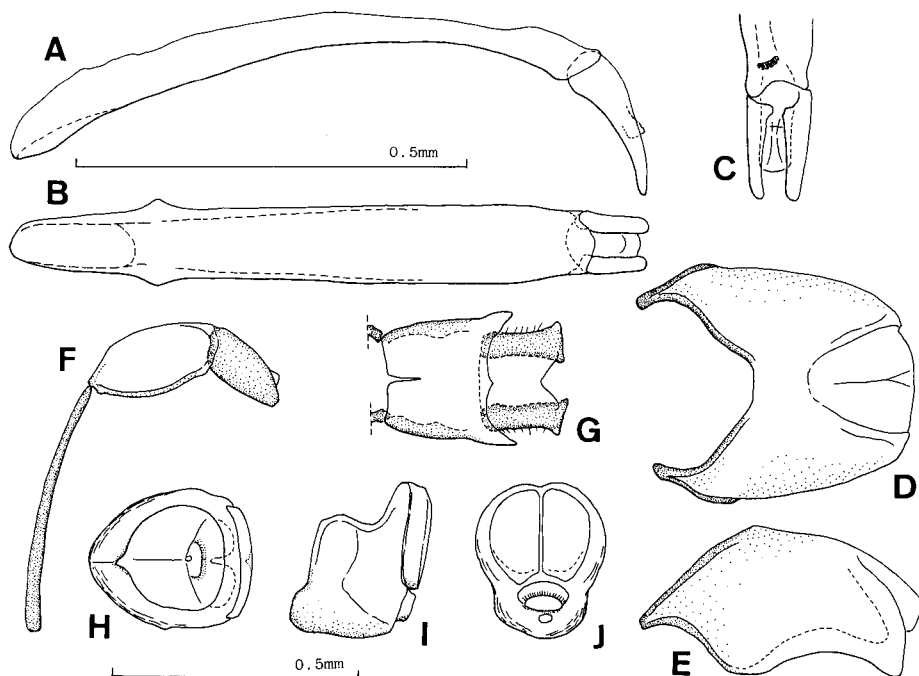


Fig. 120. *Paromalus parallelepipedus* (Herbst). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite, dorsal view. E: Ditto, lateral view. F: Male genitalia, 9th and 10th tergites, lateral view. G: Ditto, dorsal view. H: Male genitalia, 8th sternum, dorsal view. I: Ditto, lateral view. J: Ditto, caudal view.

Paromalus (Paromalus) parallelepipedus (Herbst, 1792)
(Fig. 119, 120)

Hister parallelepipedus Herbst, 1792: 37.

Hister pusillus Kugelann, 1792: 305, synonymized by Kugelann, 1794: 518.

Hister picipes: Sturm, 1805: 248 [emend.].

Microlomalus parallelepipedus: Lewis, 1907a: 318.

Paromalus parallelepipedus: Lewis, 1892a: 36 [Sapporo, Miyanoshita, Nikkô, Nishimura]; Mazur, 1984: 139; Hisamatsu, 1985b: 225 [photo].

Japanese name: Hosô-chibi-hirata-emma-mushi.

Description. Male and female. Body length, PPL, male, 1.99 – 2.36 mm (2.13 ± 0.03 , $n=16$), female, 1.85 – 2.23 mm (2.06 ± 0.03 , $n=20$), PEL, male, 1.81 – 2.13 mm (1.98 ± 0.02 , $n=16$); female, 1.73 – 2.13 mm (1.94 ± 0.02 , $n=20$). Width, male, 1.08 – 1.24 mm (1.16 ± 0.01 , $n=16$), female, 0.99 – 1.26 mm (1.14 ± 0.02 , $n=20$). Biometric data are given in Table 29. Body oblong, black and shining; tibiae, mouthparts and antennae rufopiceous.

Frontal stria of head impressed and complete, its lateral portions parallel. Disk feebly depressed on apical 1/2, and evenly covered with moderate punctures which are separated by 1 – 3 times the diameter, with microscopic punctures intermingled.

Pronotal sides (Fig. 119A) feebly arcuate and convergent forward on basal 3/4, then strongly convergent apically. Emarginated portion of anterior margin of pronotum bisinuate. Marginal stria well impressed and complete laterally and anteriorly. Disk evenly covered with moderate punctures which are separated by 2 – 4 times their diameter or more; interspace among the moderate ones sparsely clothed with microscopic punctures. Antescutellar area without a large puncture, but feebly depressed.

Epipleural marginal stria weakly impressed on apical 1/2. Marginal elytral stria strongly carinate and complete, its apical end extending along posterior margin, attaining to sutural angle, then curved and a little extending basally. Epipleura sparsely clothed with microscopic punctures. Disk of elytra sparsely covered with coarse punctures which are separated by 2 – 5 times their diameter, except on the following areas: a narrow band along suture which is clothed with microscopic punctures and feebly elevated, a narrow area along the basal margin and an extreme apical band which are impunctate; surface between the coarse punctures sometimes clothed with microscopic punctures. Dorsal stria absent, but a weak oblique depression present on laterobasal 1/2.

Propygidium densely covered with coarse, round and shallow punctures, which become finer and sparser around margin; surface between the punctures with weakly transverse alutaceous microsculpture. Pygidium (Fig. 119C) evenly clothed with fine punctures which are separated by about 1.5 (1 – 2) times the diameter; surface between the fine punctures intermingled with microscopic punctures. In female, punctures of pygidium similar to those of male, and a deep sculpture present as shown in fig. 119C.

Anterior margin of prosternal lobe (Fig. 119B) truncate medially; the anterior angles of the lobe broadly round; marginal stria absent anteriorly, weakly impressed laterally on basal 1/2; inside of basal angle deeply excavate; disk sparsely covered with moderate punctures which are separated by 1 – 5 times the diameter. Punctuation of prosternal process similar to that of the lobe. Descending lateral stria strongly carinate

Table 29. Biometric data of *Paromalus parallelepipedus* Herbst.

	Male	Female
APW	0.51-0.59 (0.56±0.005) 16	0.51-0.61 (0.55± 0.01) 20
PPW	1.00-1.14 (1.07± 0.01) 16	0.95-1.14 (1.06± 0.01) 20
PL	0.59-0.73 (0.68± 0.01) 16	0.61-0.73 (0.67± 0.01) 20
EL	1.12-1.38 (1.23± 0.02) 16	1.02-1.36 (1.21± 0.02) 20
EW	1.08-1.24 (1.16± 0.01) 16	0.99-1.26 (1.14± 0.02) 20
ProW	0.55-0.63 (0.59± 0.01) 16	0.49-0.63 (0.58± 0.01) 20
ProL	0.22-0.28 (0.25± 0.01) 16	0.20-0.30 (0.24±0.005) 20
PyL	0.32-0.39 (0.37± 0.01) 16	0.24-0.39 (0.32± 0.01) 20
PTL	0.39-0.49 (0.45± 0.01) 16	0.37-0.47 (0.44± 0.01) 20
MSTL	0.39-0.49 (0.44± 0.01) 16	0.35-0.47 (0.41± 0.01) 20
MTTL	0.45-0.53 (0.50±0.005) 16	0.39-0.53 (0.47± 0.01) 20

and complete.

Anterior margin of mesosternum (Fig. 119B) strongly emarginate medially; marginal stria absent anteriorly and deeply impressed and complete laterally, its posterior end continued to basal end of lateral metasternal stria; disk sparsely covered with moderate punctures, which are separated by 2 – 5 times their diameter, except on area surrounded by transverse stria and meso-metasternal suture; transverse stria well impressed, acutely angulate on each lateral 1/2 and arcuate medially. Meso-metasternal suture indistinct. Intercoxal disk of metasternum sparsely and coarsely punctate, the punctures becoming finer medially, being separated by 2 – 3 times their diameter; surface between coarse punctures intermingled with fine punctures. Lateral disk scattered with moderate punctures which are separated by 2 – 5 times their diameter or more. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and attaining to the middle of metasternal-metepisternal suture. Post-mesocoxal stria extending along mesocoxal cavity, its outer end strongly bent posteriorly.

Punctuation of intercoxal disk of 1st abdominal sternum similar to that of sides of metasternal intercoxal disk; 1st abdominal stria complete and well impressed.

Protibia with 3 denticles on outer margin. Mesotibia with 4 spinules on outer margin, the basal one small. Metatibia with 1 spinule near the apex.

Male genitalia as shown in Fig. 120

Specimens examined. [Hokkaidô] 4 exs., Kami-Shihoro, 17-24/v, 19-23/vi/1989, K. Haga; 12 exs., Nopporo, 5, 19, 20, 22, 26, 30/vi/1987, M. Ôhara; 12 exs., Ditto, 19/v/1936, M. Inoue (HFFP); 1 ex., Kitanoue, 23/viii/1949, M. Inoue, collected from *Picea glehnii*. (HFFP); 21 exs., Kamui-dake, Jôzankei, 11/vi/1990, M. Ôhara; 4 exs., Abuta, 4/vi/1951, M. Inoue, collected from *Picea jezoensis*. (HFFP); 3 exs., Nanae-chô, 19/vii/1948, M. Inoue (HFFP).

[Honshû] Iwate-ken: 2 exs., Numakunai, 25/vi/1948, M. Inoue, red pine (HFFP); 1 ex., Mizusawa, 28/vi/1948, M. Inoue (HFFP). Fukushima-ken: 6 exs., Yunohana, Tateiwa, Minami-Aizu, 6/v/1949, Y. Kurosawa (NSMT); 1 ex., Wakamatsu, 30/iv/1949, T. Yoneyama (NSMT). Tôkyô-to: 1 ex., Oamaru, Inagi, 10/iv/1988, K. Sawada; 4 exs., Akaidani, 5/v/1949, K. Nagayama (NA).

Distribution. Japan (Hokkaidô, Honshû); Europe; Crimea; Caucasus; Siberia.

Remarks. Small specimens of *Paromalus parallelepipedus* resemble *P. omineus*, but can be distinguished by the different shape of the transverse mesosternal stria and the body color.

This species is frequently collected on *Abies sachalinensis* in Hokkaidô. Mazur (1981) recorded it from the following trees: *Pinus silvestris*, *Picea abies*, *Abies alba*,

Quercus, *Fagus silvatica*, *Salix*, and *Tomicus piniperda*.

Paromalus (Paromalus) vernalis Lewis, 1892
(Fig. 121, 122)

Paromalus vernalis Lewis, 1892a: 35 [Japan; Nara, Oyayama, Yuyama]; Hisamatsu, 1968: 31 [Ryūkyū]; 1985b: 225 [photo]; Mazur, 1984: 134.

Microtomalus vernalis: Lewis, 1907a: 318.

Japanese name: Ko-chibi-hirata-emma-mushi.

Description. Male and female. Body length, PPL, male, 1.42 – 1.64 mm (1.51 ± 0.03 , n=6), female, 1.39 – 1.66 mm (1.53 ± 0.02 , n=11), PEL, 1.32 – 1.54 mm (1.41 ± 0.03 , n=7), female, 1.23 – 1.61 mm (1.44 ± 0.03 , n=11). Width, male, 0.83 – 0.98 mm (0.88 ± 0.02 , n=7), female, 0.76 – 0.98 mm (0.89 ± 0.21 , n=11). Biometric data are given in Table 30. Body black, sometimes reddish brown and shining; femora, tibiae, mouthparts and antennae rufopiceous.

Frontal stria of head deeply impressed, its sides feebly divergent anteriorly; disk sparsely covered with moderate and deep punctures which are separated by 4 – 6 times their diameter and become denser apically; surface between the moderate ones rarely intermingled with microscopic punctures.

Pronotal sides (Fig. 121A) feebly arcuate and convergent forward. Marginal stria distinctly carinate and complete anteriorly and laterally. Disk of pronotum evenly covered with coarse punctures which are separated by about 2 (1 – 3) times the diameter and become finer medio-anteriorly, with other microscopic punctures sometimes intermingled. Antescutellar area without a large depression.

Epipleural marginal stria weakly impressed on apical 1/2. Elytral marginal stria deeply impressed and sparsely and coarsely carinate, its apical end extending along

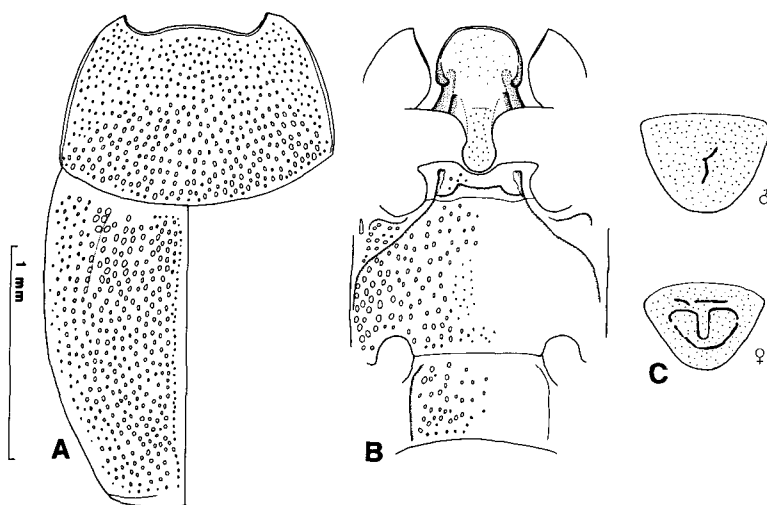


Fig. 121. *Paromalus vernalis* Lewis. A: Pronotum and left elytron, dorsal view. B: Prosternum, mesosternum, metasternum and 1st abdominal sternum. C: Pygidium.

apical margin, attaining to near the middle of apical margin of elytron. Dorsal stria absent, but an oblique depression shortly present at lateral 1/2 on basal 1/3. Disk of elytra evenly covered with coarse, round and shallow punctures except on the following areas: a narrow band along suture which is impunctate and feebly elevated, a narrow band along basal margin, and an extreme apical band; the coarse punctures becoming coarser near the oblique depression and gradually sparser apically.

Propygidium densely covered with coarse, round, shallow punctures and intermingled with fine punctures, and finely punctate narrowly along the margin. Pygidium evenly covered with fine punctures which are separated by about 2 (1 – 3) times the diameter. In female, punctuation of the pygidium as in male and a deep sculpture present as shown Fig. 121C; the sculpture consisting of 2 parts, a transverse deep part basally and a circular one on apical 2/3 area, inside the circular one deeply and irregularly rugose.

Anterior margin of prosternal lobe (Fig. 121B) nearly round; marginal stria sometimes present anteriorly and impressed deeply on laterobasal 1/2; disk irregularly scattered with fine punctures. Punctuation of prosternal process similar to that of the prosternal lobe. Lateral descending stria strongly carinate, short and complete.

Anterior margin of mesosternum (Fig. 121B) strongly emarginate medially. Marginal stria absent anteriorly, and complete and carinate laterally. Punctuation of disk similar to that of the prosternal process; impunctate and depressed behind transverse stria and narrowly along lateral marginal stria. Meso-metasternal suture absent. Intercoxal disk of metasternum sparsely covered with coarse and oblong punctures which are separated by 2 – 3 times their diameter and become finer medially and coarser on lateral 1/3, the punctures on lateral third 3 times as large as those of the median 1/3. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and attaining to the middle of metasternal-metepisternal suture. Lateral disk sparsely covered with coarse punctures which are smaller than those of sides of intercoxal metasternal disk. Post-mesocoxal stria extending along mesocoxal cavity, its outer end strongly bent posteriorly.

Intercoxal disk of 1st abdominal sternum sparsely and coarsely punctate, the punctures becoming finer medially; 1st abdominal stria completely present on each lateral side.

Protibia with 4 denticles on outer margin. Mesotibia with 3 spinules on outer margin. Metatibia with a spinule near the apex.

Male genitalia as shown in Fig. 122.

Specimens examined. [Honshû] Fukushima-ken: 1 ex., Niizuru, Ônuma, 6/iv/1949, K. Nagayama (NA). Nara-ken: 1♂, Nara Park, Nara, 7/x/1987, K. Sawada (NA); 1 ex., Mt. Kasuga, 26/ix/1948, M. Gotô (NA); 1 ex., Ditto, 9/v/1952, K. Sawada (NA).

[Shikoku] Kôchi-ken: 1 ex., Yakyo, 4/ix/1945, K. Sakaguchi, collected under bark (NA).

[Kyûshû] Miyazaki-ken: 1 ex., Koshima, 24/vii/1953, M. Yoshida (NA). Kagoshima-ken: 1♀, Kurino, 3/ii/1985, M. Ôhara; 3 exs., Sata, 9/iii/1964, no collector's name (NA).

[Nansei Isles] Tokara-Nakano-shima Is.: 1 ex., Nakano-shima, 12/vi/1953, S. Uéno (NA); 1♂, 3 exs., Ditto, 25/v, 9/vi/1953, T. Nakane (NA); 1 ex., Ditto, 5/vi/1953, S. Miyamoto (NA); 1♀, Funakura, Mitake, Nakano-shima, 18/viii/1982, Y. Takai. Tokara-Takara-jima Is.: 4 exs., Takara-jima, 6/vii/1953, T. Nakane. Amami-Ôshima Is.: 1♀, Kinsakubaru, Naze, 30/vi/1984, M. Ôhara. Ishigaki Is.: 1♀, Mt. Banna, Ishigaki, 1/iv/1976, N. Nishikawa.

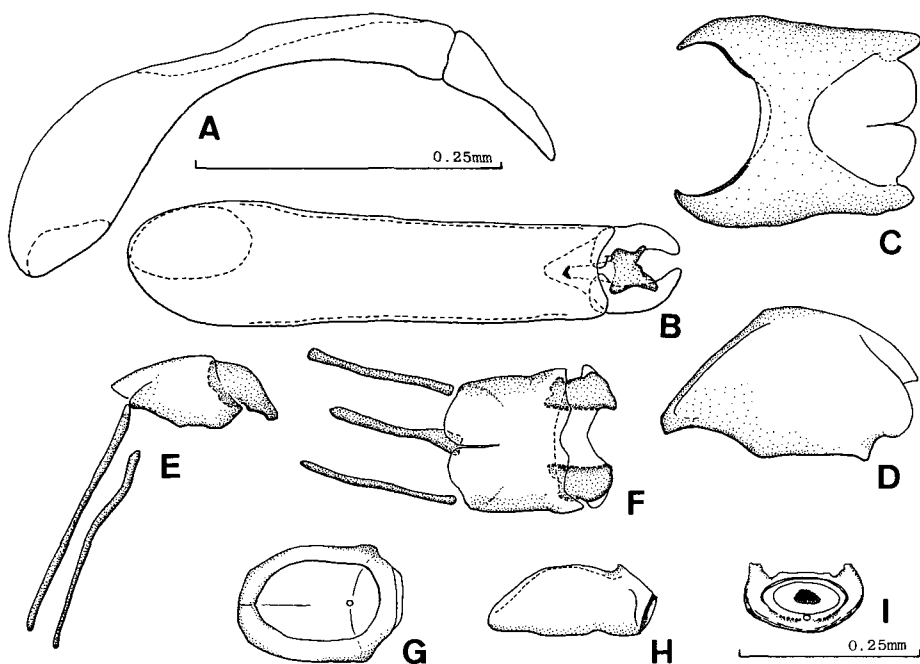


Fig. 122. *Paromalus vernalis* Lewis. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), lateral view. F: Ditto, dorsal view. G: Male genitalia, 8th sternum, dorsal view. H: Ditto, lateral view. I: Ditto, caudal view.

Table 30. Biometric data of *Paromalus vernalis* Lewis.

	Male	Female
APW	0.41-0.44 (0.42±0.01) 7	0.39-0.47 (0.42±0.01) 11
PPW	0.76-0.88 (0.79±0.02) 7	0.68-0.90 (0.80±0.02) 11
PL	0.42-0.49 (0.48±0.01) 7	0.42-0.52 (0.49±0.01) 11
EL	0.83-1.01 (0.92±0.02) 7	0.76-1.00 (0.87±0.02) 11
EW	0.83-0.98 (0.88±0.02) 7	0.76-0.98 (0.89±0.02) 11
ProW	0.37-0.46 (0.41±0.01) 6	0.35-0.46 (0.41±0.01) 11
ProL	0.12-0.17 (0.15±0.01) 6	0.12-0.19 (0.16±0.01) 11
PyL	0.24-0.27 (0.25±0.01) 6	0.19-0.25 (0.22±0.01) 11
PTL	0.27-0.34 (0.32±0.01) 7	0.27-0.34 (0.31±0.01) 11
MSTL	0.25-0.32 (0.29±0.01) 7	0.27-0.34 (0.30±0.01) 11
MITL	0.30-0.37 (0.34±0.01) 6	0.29-0.37 (0.33±0.01) 10

Distribution. Japan (Honshû, Shikoku, Kyûshû, Nansei Isles); Taiwan; Russia (Primorskiy Kray).

Remarks. *Paromalus vernalis* resembles *P. parallelepipedus*, but is distinguishable by the marginal elytral stria not attaining the medio-apical angle of the elytron (see the key and description).

6. 3. 8 SUBFAMILY ABRAEINAE MARSEUL, 1857

Key to the Japanese tribes and genera of the subfamily Abraeinae

- 1(2) Posterior tarsus consisting of 4 tarsomeres.Tribe Acritini Wenzel, 1944
..... Genus *Acritus* J. L. LeConte, 1853
- 2(1) Posterior tarsus consisting of 5 tarsomeres.
- 3(4) Pronotum with a longitudinal depression laterally and with a transverse line on middle or near middle. Prosternal process with an X-shaped excavation. Mesosternum and metasternum fused.
..... Tribe Plegaderini Portevin, 1929
..... Genus *Plegaderus* Erichson, 1834
- 4(3) Pronotum smooth, without line. Prosternal process with no excavation. Mesosternum and metasternum separated by meso-metasternal suture.Tribe Abraeini Portevin, 1929
..... Genus *Chaetabraeus* Portevin, 1929

TRIBE ABRAEINI MARSEUL, 1857

GENUS CHAETABRAEUS PORTEVIN, 1929

Chaetabraeus Portevin, 1929: 624 [type species; *Hister globulus* Creutzer, 1799: 83, designated by monotypy].

Chaetabraeus: Mazur, 1989: 31, emendation for *Chaetabraeus* Portevin, 1929.

Chartabraeus: Witzgall, 1971: 162 [error].

Recently, Mazur (1989) has studied this genus. In his opinion this genus is characterized by the following characters: (1) long and pentagonal propygidium, (2) strongly convex dorsum and usually brownish black or black coloration (3) living in the dung of various mammals, on carrion or in rotting vegetation.

Key to the Japanese species of the genus *Chaetabraeus*

- 1(2) Disk of prosternum with a deep fovea on each side. *C. bonzicus* (Marseul, 1873)
- 2(1) Disk of prosternum without deep fovea on each side.
- 3(4) Body smaller; 1.37 – 1.64 mm, black with red luster; legs reddish brown.
..... *C. cohaeres* (Lewis, 1898)
- 4(3) Body larger; 1.84 mm, black with green luster; legs yellowish brown. *C. sp.*

Chaetabraeus bonzicus (Marseul, 1873)

(Fig. 123, 124, 125, 126, 127)

Abraeus bonzicus Marseul, 1873: 221, 226 [Japan: Nangasaki (=Nagasaki, Kyūshū)]; Lewis, 1898: 181 [Otaru, Yezo (=Hokkaidō)]; Jakobson, 1911: 653; Bickhardt, 1916-17: 74, t. 3, fig. 23; Cooman, 1937: 38; Reichardt, 1941: 130, 131, fig. 59.

Chaetabraeus bonzicus: Mazur, 1984: 8.

Chaetabraeus bonzicus: Mazur, 1989: 32.

Abraeus (*Chaetabraeus*) *bonzicus*: Kryzhanovskij and Reichardt, 1976: 96.

Japanese name: Kuro-tsubu-emma-mushi.

Description. Biometric data are given in Table 31. Body oval, strongly convex and black; tarsi and antennae rufopiceous. Body length, PPL, 1.84 – 2.25 mm (2.08 ± 0.03, n=20), PEL, 1.74 – 2.21 mm (1.97 ± 0.03, n=20). Width, 1.62 – 1.94 mm (1.78 ± 0.02, n=20).

Head densely covered with coarse and longitudinal oblong punctures, and sparsely with stout and erect setae, which are about 1/3 as long as the transverse diameter of the eye; surface with a transverse carina behind each antennal cavity (Fig. 124F).

Anterior margin of pronotum emarginate, the median portion nearly straight; lateral sides evenly arcuate and weakly convergent to apices on basal 2/3, thence strongly arcuate and convergent to the apices. Disk of pronotum densely covered with coarse and round punctures, the punctures being as large as those of the head and separated by 0.3 – 0.5 times their diameter, becoming denser and a little finer apically, and sparsely with erect setae which are as large as those of the head.

Epipleura of elytra without stria. All dorsal striae absent. Disk of elytra with punctation and erect setae, the punctures being similar to, but a little denser than, pronotal ones, usually fused to form longitudinal rugae on lateral and apical area, and becoming finer on area along the sutural line.

Propygidium pentagonal, its disk with punctation and setae similar to those of pronotum, the coarse punctures being separated by 0.3 – 0.5 times their diameter. Pygidium longitudinal oblong, its punctation similar to propygidial one but somewhat sparser and shallower.

Prosternal process nearly quadrangular; its anterior angles extended latero-anteriorly, acute, and with a deep fovea (Fig. 125A); anterior margin completely impressed, with a transverse depression a little distant from the margin; disk of the process sparsely covered with coarse punctures which are separated by 0.5 – 1 times the diameter and as coarse as elytral ones, with other moderate punctures intermingled with them.

Mesosternum narrow and transverse; anterior margin straight medially and curved laterally along the posterior margin of procoxa; the anterior and lateral sides distinctly carinate and marginate; disk of mesosternum sparsely covered with coarse punctures which are a little coarser than elytral ones and separated by 0.3 – 1 times the diameter, and fine punctures sparsely intermingled among the coarse ones. Meso-

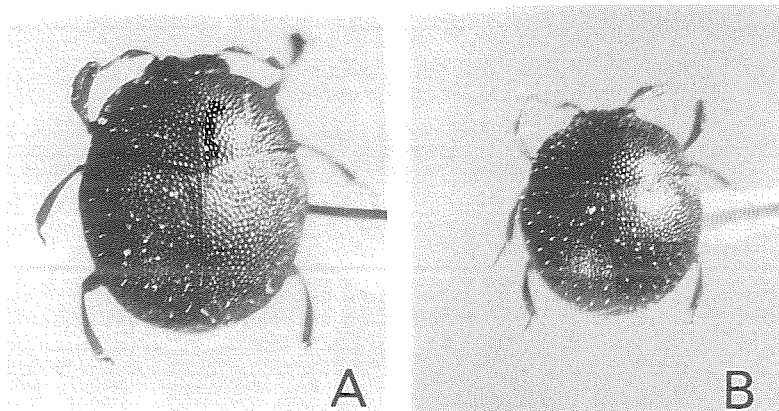


Fig. 123. Adults in dorsal view. A: *Chaetabraeus bonzicus* (Marseul). B: *C. cohaeres* (Lewis.)

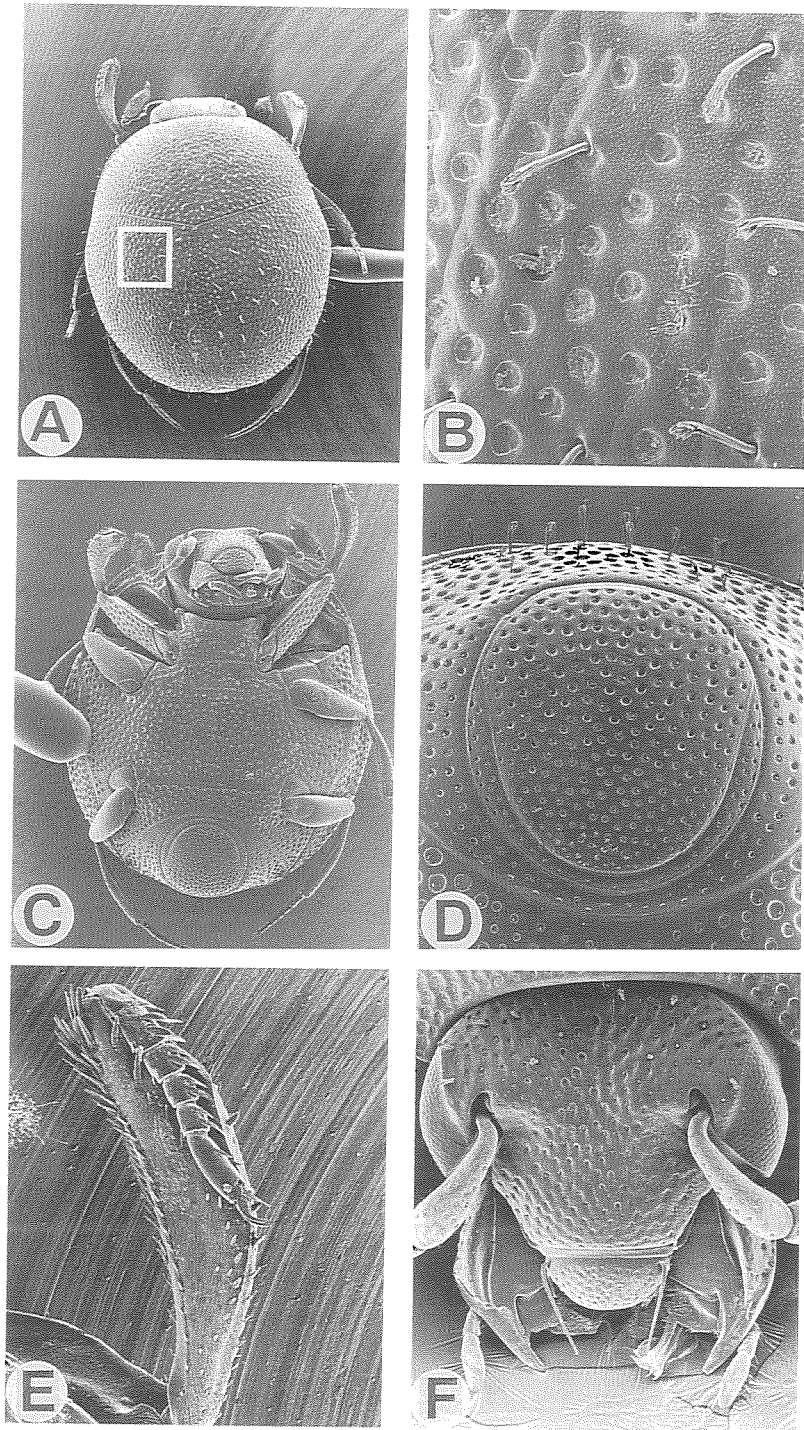


Fig. 124. A – E: *Chaetabraeus cohaeres* (Lewis). F: *C. bonzicus* (Marseul). A: Adult, dorsal view. B: Surface of elytron. C: Adult, ventral view. D: Pygidium. E: Right protibia, dorsal view. F: Head, frontal view.

metasternal suture distinctly impressed and strongly crenate. Metasternum with short lateral stria, which is obliquely and posteriorly extended, its apical end attaining to the basal 1/3 of metasternum; intercoxal disk evenly covered with coarse, shallow and round punctures which are a little coarser than those of the mesosternum and separated by 0.5 – 1 times the diameter, other fine punctures being intermingled among the coarse ones; longitudinal mid line clearly and deeply impressed; lateral disk densely covered with large, round and somewhat deep punctures, fine punctures being intermingled on apical 2/3 (Fig. 125A).

Intercostal disk of 1st abdominal sternum narrow and transverse, with punctation similar to that of mesosternum.

Protibia slender, its outer margin with many small setae.

Male genitalia as shown in Fig. 126.

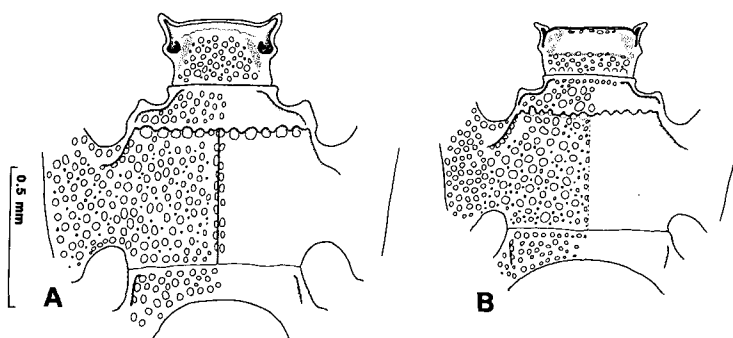


Fig. 125. Prosternal process and meso- and metasternum. A: *Chaetabraeus bonzicus* (Marseul). B: *C. cohaeres* (Lewis).

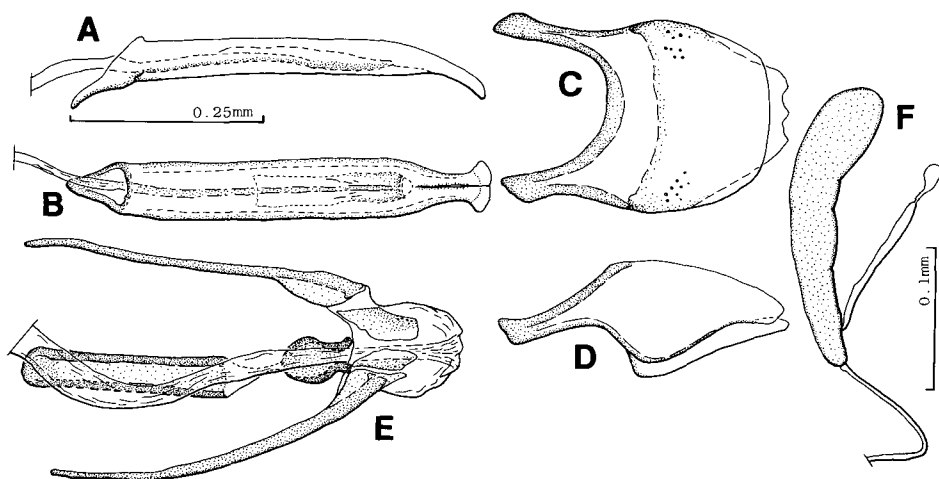


Fig. 126. *Chaetabraeus bonzicus* (Marseul). A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. F: Spermatheca.

Table 31. Biometric data of *Chaetabraeus bonzicus* (Marseul) and *C. cohaeres* (Lewis).

	<i>C. bonzicus</i>	<i>C. cohaeres</i>
APW	0.61-0.76 (0.68±0.01) 20	0.47-0.59 (0.53± 0.01) 28
PPW	1.47-1.79 (1.61±0.02) 20	1.15-1.40 (1.25± 0.01) 28
PL	0.61-0.96 (0.82±0.02) 20	0.51-0.69 (0.61± 0.01) 28
EL	0.91-1.45 (1.18±0.03) 20	1.25-1.49 (1.39± 0.01) 28
EW	1.62-1.94 (1.78±0.02) 20	0.76-1.03 (0.91± 0.01) 28
ProW	0.71-1.00 (0.85±0.02) 20	0.54-0.74 (0.66± 0.01) 28
ProL	0.47-0.56 (0.53±0.01) 20	0.37-0.51 (0.43± 0.01) 28
PyL	0.44-0.66 (0.56±0.01) 20	0.37-0.49 (0.41± 0.01) 25
PTL	0.49-0.61 (0.58±0.01) 20	0.37-0.44 (0.42±0.005) 27
MSTL	0.47-0.59 (0.53±0.01) 20	0.32-0.44 (0.40± 0.01) 26
MTTL	0.54-0.66 (0.60±0.01) 20	0.37-0.49 (0.42±0.004) 26

Female genitalia: spermatheca as shown in Fig. 126F.

Specimens examined. [Hokkaidô] 2 exs., Sapporo, 25/iii, 23/v/1985, M. Ôhara; 1 ex., Hitsujiga-oka, Sapporo, 20/vii/1985, M. Ôhara; 1 ex., Jôzankei, 29/vi/1985, M. Ôhara; 1 ex., Nopporo, 15/ix/1989, M. Ôhara.

[Honshû] Fukushima-ken: 1 ex., Arai, Mizubayashi, 12/xi/1975, K. Tazoe; 3 exs., Wakamatsu, 29/vi/1948, Y. Kurosawa (NSMT); 1 ex., Ditto, 5/vi/1949, T. Yoneyama (NSMT). Ibaraki-ken: 3 exs., Yatabe, 5/vi/1986, M. Kiuchi; 1 ex., Kamisakai, Sakura-mura, 4/v/1985, H. Haga. Chiba-ken: 1 ex., Ôami, 19/vi/1984, M. Ôhara. Tôkyô-to: 2 exs., Aihara, 16/v/1987, H. Takizawa; 1 ex., Suginami, 14/iv/1979, M. Ôhara. Nagano-ken: 4 exs., Kakeyu, Maruko, Chiisagata, 3/iii/1969, M. Kiuchi. Hyôgo-ken: 4 exs., Kôbe, 25/vi, 28/vii/1930, no collector's name (BSM).

[Kyûshû] Kagoshima-ken: 1 ex., Shimadomari, Sata, 4/v/1992, K. Haga.

Distribution (Fig. 127). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Prymorskij Kray.

Remarks. *Chaetabraeus bonzicus* is very similar to *C. cohaeres*; however, it differs from the latter by the large size and the deep foveae on the prosternal process. See also the description of *C. cohaeres*.

This species occurs in many kinds of rotting organic substances, in manure, animal dropping, carrion, etc.

Chaetabraeus cohaeres (Lewis, 1898), sp. rev.
(Fig. 123, 124, 125, 127)

Abraeus cohaeres Lewis, 1898: 181 [Hongkong]; Desbordes, 1919: 409.

Abraeus bonzicus: Bickhardt, 1913: 177 [partim, Taiwan].

Chaetabraeus cohaeres: Mazur, 1989: 32.

Japanese name: Ko-kuro-tsubu-emma-mushi.

Description. Body length, PPL, 1.37 – 1.64 mm (1.54 ± 0.01, n=28), PEL, 1.35 – 1.62 mm (1.50 ± 0.01, n=28), Width, 0.76 – 1.13 mm (0.92 ± 0.01, n=29).

Extremely similar to *C. bonzicus* but differs as follows: smaller in size (Table 31); punctuation of propygidium a little sparser (Fig. 124D); anterior angles of prosternal process without deep fovea, only weakly depressed; lateral disk of metasternum densely covered with coarser punctures, with no fine punctures intermingled; longitudinal mid line of metasternum present, but obscure, not strongly impressed; male genitalia not expanded at caudal apex.

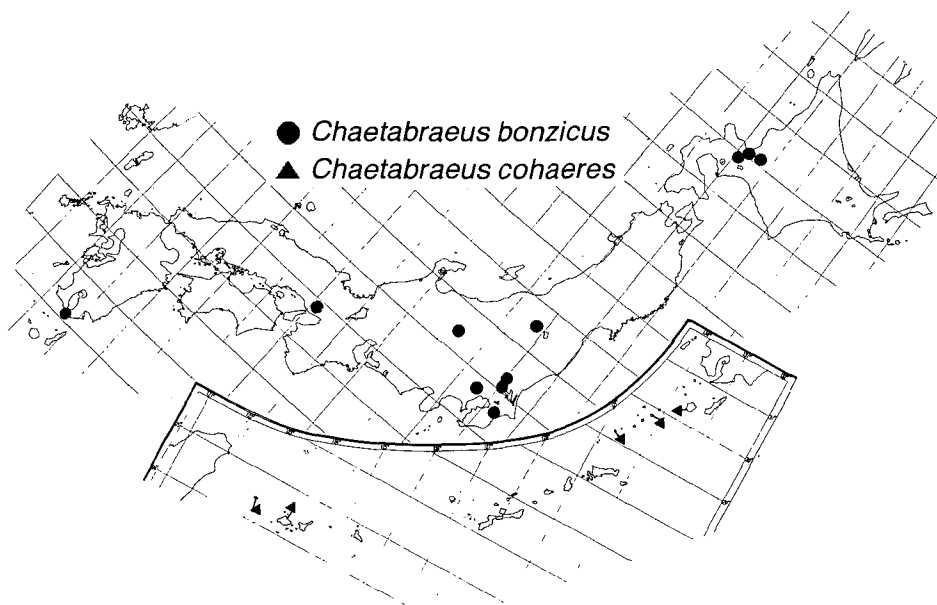


Fig. 127. Collection sites of *Chaetabraeus bonzicus* (Marseul) and *C. cohaeres* (Lewis) in Japan.

Specimens examined. [Nansei Isles] Yaku-shima Is.: 21 exs., 2/iv/1985, M. Kiuchi. Tokara-Nakano-shima Is.: 1 ex., 14/vii/1982, M. Ôhara. Tokara-Takara-jima Is.: 11 exs., 18/iii/1986, E. Matsui. Iriomote Is.: 1 ex., Ôtomi, 17/iii/1985, S. Masuda; 3 exs., Ditto, K. Nakamine. Yonaguni Is.: 2 exs., Urabu-take, 21/II/1993, Y. Hirano.

[Taiwan] Nantou pref.: 40 exs., Songkang, alt. 2000 m., 31/iii, 2, 5, 14/iv/1986, M. Ôhara; 1 ex., Nanshanxi, 28/xii/1974, K. Masumoto. Pingtung pref.: 28 exs., Sizhongchi, 11/v/1986, M. Ôhara. Lanyu Is. (Orchid Is.): 22 exs., 18-22/iv/1986, M. Ôhara.

Distribution (Fig. 127). Japan (Nansei Isles); Taiwan; China (Hongkong). New to Japan.

Remarks. Bickhardt (1913) erroneously synonymized this species with *C. bonzicus*. It is distinct from the latter, being distinguished by the characteristics given above.

Chaetabraeus sp.

In general appearance similar to *bonzicus* and *cohaeres*, but distinguishable by the following characteristics: fovea of prosternum absent; punctuation of intercoxal disk of metasternum much denser than in *bonzicus*; body with green luster; body nearly as large as *bonzicus* and distinctly larger than *cohaeres*. Biometric data are as follows: PPL 1.84, PEL 1.79, APW 0.59, PPW 1.47, EL 1.62, EW 1.13, ProW 0.69, ProL 0.51, PyL 0.47, PTL 0.49, MSTL 0.47, MTTL 0.49. At present it is uncertain to me whether this form is a good species, because it is represented by a single specimen.

Specimen examined. [Nansei Isles] Iriomote Is.: 1 ex., Iriomote-jima, 22/iii/1982, M. Kiuchi.

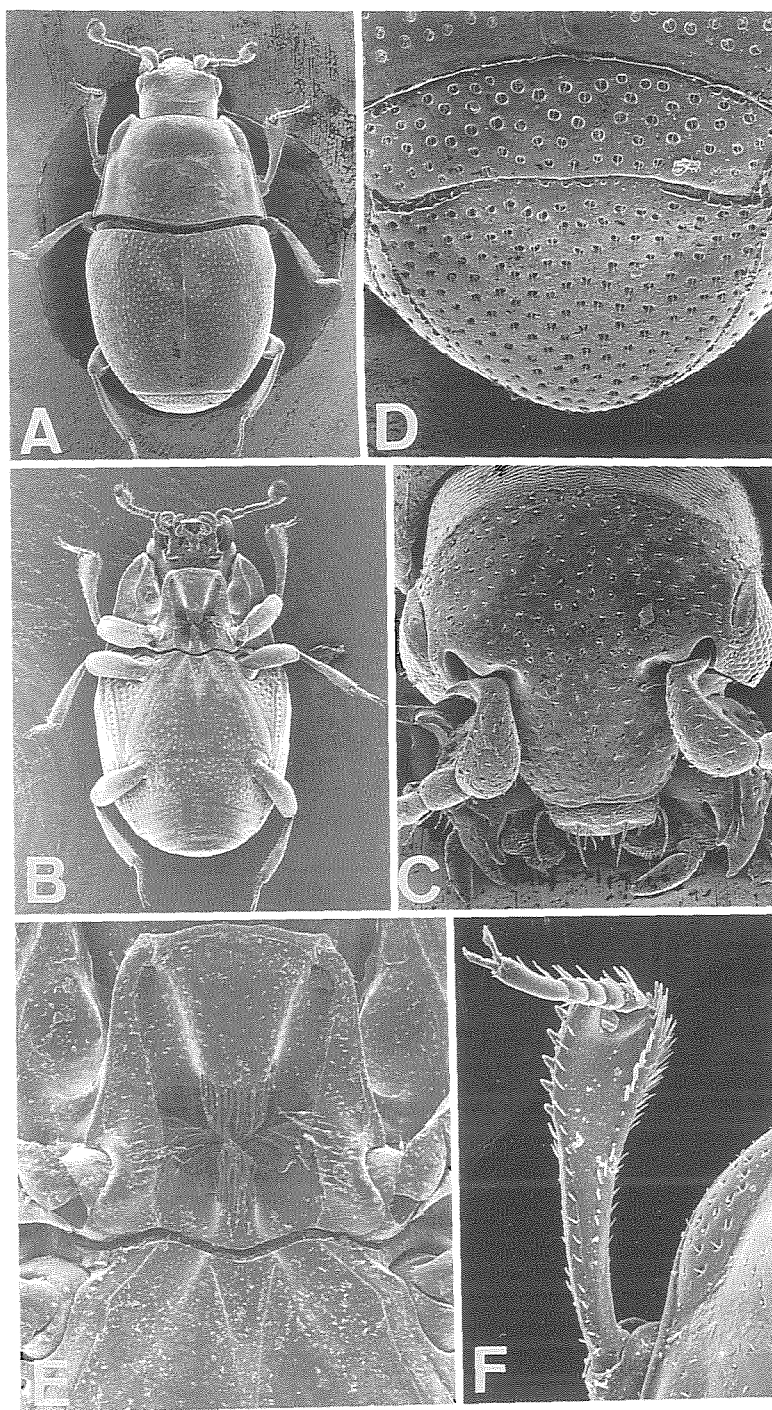


Fig. 128. *Plegaderus marseuli* Reitter. A: Adult, dorsal view. B: Ditto, ventral view. C: Head. D: Propygidium and pygidium. E: Prosternum and mesosternum, ventral view. F: Protibia, dorsal view.

TRIBE PLEGADERINI PORTEVIN, 1929

GENUS PLEGADERUS ERICHSON, 1834

Plegaderus Erichson, 1834: 203 [type species *Hister caesus* Herbst, 1792: 40, designated by Thomson, 1859: 75]; Lacordaire, 1854: 278; Marseul, 1856: 256; Schmidt, 1885a: 284; Ganglbauer, 1899: 397; Reitter, 1909: 204; Jakobson, 1911: 83, 97; Arnett, 1962: 373, 379; Witzgall, 1971: 160; Kryzhanovskij and Reichardt, 1976: 85; Mazur, 1973: 19; 1981a: 55; 1984: 12; Vienna, 1980: 73.

SUBGENUS PLEGADERUS ERICHSON, 1834

Plegaderus (Plegaderus) marseuli Reitter, 1877
(Fig. 128, 129)

Plegaderus marseuli Reitter, 1877: 371 [Japan].

Plegaderus (Plegaerus) marseuli: Nakane, 1963: 67; Kryzhanovskij and Reichardt, 1976: 86 [key]; Mazur, 1984: 13; Hisamatsu, 1985b: 222.

Japanese name: Mune-mizo-tsubu-emma-mushi.

Description. Body oblong-oval. Cuticles shining and black; tibiae, tarsi and antennae rufopiceous. Body length, PPL, 1.40 – 1.52 mm (1.47 ± 0.02 , $n=8$), PEL, 1.35 – 1.49 mm (1.43 ± 0.01 , $n=8$), Width, 0.93 – 1.03 mm (0.99 ± 0.01 , $n=8$). Biometric data are given in Table 32.

Head (Fig. 128C) with a convex area behind each antennal cavity; surface unevenly covered with coarse and setiferous punctures which are separated by 1 – 3 times the diameter, the punctures becoming denser on epistoma.

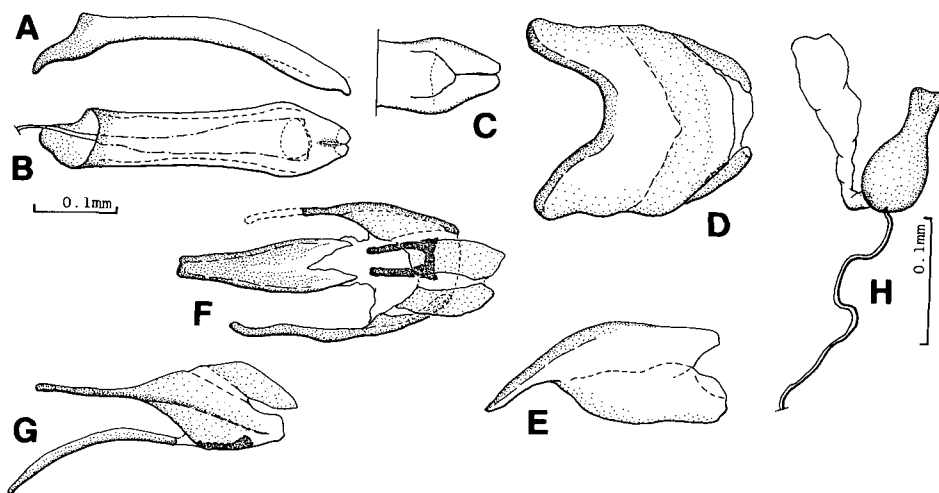


Fig. 129. *Plegaderus marseuli* Reitter. A: Aedeagus, lateral view. B: Ditto, dorsal view. C: Apex of aedeagus, ventral view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Ditto, lateral view. F: Male genitalia, 9th and 10th tergites and 9th sternum (spicule), dorsal view. G: Ditto, lateral view. H: Spermatheca and spermathecal gland.

Table 32. Biometric data of *Plegaderus marseuli* Reitter.

APW	0.46-0.51	(0.48± 0.01)	8
PPW	0.83-0.93	(0.88± 0.01)	8
PL	0.57-0.66	(0.62± 0.01)	8
EL	0.74-0.90	(0.81± 0.02)	8
EW	0.93-1.03	(0.99± 0.01)	8
ProW	0.44-0.56	(0.49± 0.01)	8
ProL	0.10-0.15	(0.14± 0.01)	8
PyL	0.29-0.34	(0.31± 0.01)	8
PTL	0.34-0.39	(0.37±0.004)	8
MSTL	0.34-0.41	(0.36± 0.01)	8
MTTL	0.39-0.44	(0.41± 0.01)	8

Pronotum strongly convex; anterior margin broadly emarginate, with a complete marginal stria; sides divergent posteriorly on basal 3/4, and strongly convergent anteriorly on apical 1/4, its lateral marginal stria clearly impressed along the margin and nearly complete, but not attaining to the apical angle. Surface of pronotum divided into 2, anterior and posterior, areas by a transverse line at apical 1/3; the anterior area with a longitudinal convex area on each lateral side, the inside margin of the convex area complete and distinct, and the disk of the convex area densely and coarsely punctate; the remain of the anterior area evenly, rather sparsely covered with coarse punctures which are separated by about 1.5 (1 – 2) times the diameter and as coarse as those of head; along the convex area there is a narrow impunctate area inside; the posterior area laterally with a longitudinal convex area which is, however, not distinct, being only weakly convex, and is sparsely and finely punctate; the remain of the posterior area sparsely clothed with fine punctures which are separated by 1 – 4 times the diameter.

Epipleura not concave. Marginal elytral stria entirely impressed but obscure on apical 1/2. A narrow area along epipleural margin impunctate. No dorsal striae present, but oblique humeral stria deeply impressed on basal 1/4 and another short stria (longitudinal depression) present near the middle of anterior margin of elytron. Surface of elytra densely covered with somewhat longitudinal oblong and coarser punctures which are a little coarser than those of head and separated by 0.5 – 1 times the diameter, the punctures becoming sparser around scutellum; a narrow band along sutural line and extreme apex impunctate.

Propygidium (Fig. 128D) densely covered with coarse, round and deep punctures which are separated by 0.5 – 1 times the diameter, and with a transverse band of moderate punctures along the posterior margin. Pygidium (Fig. 128D) somewhat sparsely covered with coarse, round and deep punctures which are separated by about 1.5 (1 – 2) times the diameter.

Prosternal process with an X-shaped excavation (Fig. 128E), which is present near basal 1/3 on the process and densely covered with long hairs; anterior margin completely with marginal stria, the lateral end of the stria continued to apex of outer margin of the X-shaped excavation; lateral side of the process completely marginate; disk of apical 1/2 of the process strongly convex, and sparsely covered with setiferous fine punctures which are separated by 2 – 3 times their diameter; lateral disk impunctate. Antennal groove deeply excavate, round and present on each lateromedian 1/6.

Meso-metasternal suture absent. Mesosternum and metasternum fused. Intercostal disk of meso-metasterna shallowly sulcate on longitudinal midline, which is 1/3 as wide as anterior margin of mesosternum, the sulcus becoming narrower posteriorly; surface of disk sparsely and coarsely punctate, the punctures as coarse as elytral ones and separated by 1 – 4 times the diameter. Two lateral metasternal striae present; internal one strongly carinate basally, and its apical end extended posteriorly and obliquely, attaining to the apical margin of metacoxae; external one (probably homologous with the posterior mesocoxal stria in Wenzel and Dybas, 1941) weakly carinate, its apical end attaining to the posterior corner of metasternum. Surface between these 2 lateral metasternal striae sparsely with fine punctures. Lateral disk of metasternum sparsely covered with several large, round, and deep punctures. Metepisternum with a row consisting of large and dense punctures.

Intercostal disk of 1st abdominal sternum striate on each side, the stria carinate, its apical end attaining to the apical 1/3; surface densely and coarsely punctate, the punctures separated by about their own diameter and as coarse as those of intercoxal disk of metasternum.

Protibia (Fig. 128F) slender, but progressively broader on apical 1/2, with 6 denticles on outer margin. Metatibia with 4 denticles on outer margin.

Male genitalia as shown in Fig. 129A – G.

Female genitalia: spermatheca as shown in Fig. 129H.

Specimens examined. [Hokkaidô] 1 ex., Kami-Shihoro, 9/vi/1989, H. Haga; 10 exs., Kamui-dake, Jôzankei, 11/vi/1990, M. Ôhara; 1 ex., Hôheikyô, Jôzankei, 16/vii/1988, S. Kudô; 1 ex., Ditto, 16/vii/1988, M. Ôhara; 1 ex., Jôzankei, 25/v/1990, M. Ôhara.

[Honshû] Gifu-ken: 1 ex., Kawayu, Hida, 31/vii/1954, T. Nakane (NA). Wakayama-ken: 6 exs., Mt. Rokkô, Naga-gun, 4/i/1950, M. Aoyagi (NA); 1 ex., Ditto (NSMT). Okayama-ken: 1♂ 1♀, 1 ex., Okayama, 23/vi/1948, M. Inoue (HFFP).

Distribution. Japan (Hokkaidô, Honshû, Shikoku, Kyûshû).

Remarks. *Plegaderus marseuli* is similar to *P. shikokensis*, but differs by the large size, the fine punctation of the surface and the divided convex area on the lateral pronotal area.

This species was found under the bark of *Pinus* in galleries of bark beetles.

Plegaderus (Plegaderus) shikokensis Hisamatsu, 1985

Plegaderus (Plegaderus) shikokensis Hisamatsu, 1985a: 5 [Japan: Mt. Ishizuchi, Ehime, Shikoku]; Hisamatsu, 1985b: 222, pl. 40, fig. 8 [noted, photo]; Hirano, 1986: 42 [Honshû].

Japanese name: Chairô-mune-mizo-tsubu-emma-mushi.

Specimens examined. No specimen was available in this study.

Distribution. Japan (Honshû, Shikoku).

TRIBE ACRITINI WENZEL, 1944

The Japanese species included in the tribe Acritini have not been sufficiently studied until now. Probably 4 or more species occur in Japan. In this paper, the known Japanese species are only listed.

GENUS ACRITUS J. L. LECONTE, 1853

Acritus J. L. LeConte, 1853: 288 [type species: *Hister nigricornis* Hoffmann, 1803: 127, designated by Thomson, 1859: 75]; Lacordaire, 1854: 281; Marseul, 1856: 595; Schmidt, 1885b: 284; Reitter, 1886: 278; Ganglbauer, 1899: 405; Reitter, 1909: 294; Jakobson, 1911: 642, 653; Bickhardt, 1916-17: 63, 76; Reichardt, 1941: 84, 138 (part); Wenzel, 1944: 58.

SUBGENUS ACRITUS J. L. LECONTE

Acritus (Acritus) komai Lewis, 1879

Acritus komai Lewis, 1879: 461 [Japan: Nagasaki]; Reichardt, 1941: 141, 147.

Acritus insularis Sharp in Blackburn and Sharp, 1885: 129, synonymized by Kryzhanovskij and Reichardt, 1976: 105.

Acritus volitans Fall, 1901: 238, synonymized by Kryzhanovskij and Reichardt, 1976: 105.

Acritus optatus Cooman, 1947: 423, synonymized by Kryzhanovskij and Reichardt, 1976: 105.

Acritus oregonensis Hatch, 1962: 256, synonymized by Kryzhanovskij and Reichardt, 1976: 105.

Japanese name: Arame-yofushi-emma-mushi.

Distribution. Japan (Kyûshû, Nansei Isles); China; North Africa; France; Mariana Isles; Hawaii; Oregon, South California.

SUBGENUS PYCNACRITUS CASEY, 1916

Pycnacrītus Casey, 1916: 252 [type species: *Acritus discus* LeConte, 1853: 289]; Mazur, 1987: 31.

Acritus (Pycnacrītus) homoeopathicus Wollaston, 1857

Acritus homoeopathicus Wollaston, 1857: 77 [Madeira]; Reitter, 1909: 297; Jakobson, 1911: 653; Reichardt, 1941: 141, 148, fig. 63c, 64c; Horion, 1949: 331; Halstead, 1963: 11; Witzgall, 1971: 164.

Acritus rhenanus Fuss, 1868: 356; Schmidt, 1885b: 324; Ganglbauer, 1899: 408, synonymized by Schmidt, 1895: 179.

Acritus shogunus Lewis, 1892b: 357 [Japan]; Reichardt, 1941: 141, 148, synonymized by Mazur, 1987: 31.

Japanese name: Kuro-yofushi-emma-mushi.

Distribution. Japan (Hokkaidô); Madeira; North Africa; Central and South Europe; Caucasus; USSR (Chabarovskij Kray).

6. 3. 9. SUBFAMILY SAPRININAE LACORDAIRE, 1854

Key to the Japanese genera of the subfamily Sapriniinae

- 1(2) Head with frontal stria. Genus *Gnathoncus* Jacquelin-Duval, 1858
- 2(1) Head without frontal stria.
- 3(4) Surface of elytra impunctate. Prosternal keel strongly narrow. Genus *Eopachylopus* Lewis, 1926
- 4(3) Surface of elytra punctate posteriorly. Prosternal keel broad and flat at top.
- 5(8) Prosternal keel with a pair of small foveae (pre-apical prosternal foveae in Wenzel, 1962) on apical 1/3. Body length, 2.0 – 4.0 mm.

- 6(7) Frontal disk of head with 1 or 2 transverse rows or irregular transverse rugae; its anterior transverse margin strongly impressed and straight. Genus *Hypocaccus* Thomson, 1867
- 7(6) Frontal disk of head usually with light punctation or weak rugae, without strongly transverse rows; its anterior transverse margin lightly impressed, usually partly arcuate, and sometimes interrupted. Genus *Hypocacculus* Bickhardt, 1916
- 8(5) Prosternal keel without small foveae. Body length, 4.6 – 8.6 mm. Genus *Saprinus* Erichson, 1834

GENUS GNATHONCUS JACQUELIN-DUVAL, 1858

Gnathoncus Jacquelin-Duval, 1858: 112 [type species: *Hister rotundatus* Kugelann, 1792: 304, designated by Thomson, 1859: 75]; Thomson, 1867: 391; Reitter, 1896: 306; Ganglbauer, 1899: 378; Reitter, 1904: 35; 1909: 290; Jakobson, 1911: 641, 648; Bickhardt, 1916-17: 104; Auzat, 1917: 206; Horion, 1936: 238; Reichardt, 1941: 154, 157; Stockmann, 1957: 67-76; Arnett, 1962: 374, 380; Halstead, 1963: 9, 11-13; Witzgall, 1971: 166; Kryzhanovskij and Reichardt, 1976: 113; Vienna, 1980: 117; Mazur, 1973: 27; 1981: 87; 1984: 103; Yélamos, 1990: 78.

Key to the Japanese species of the genus *Gnathoncus*

- 1(2) Punctures of pygidium round. Apical area of prosternal process with a deep excavation. *G. nannetensis* (Marseul, 1862)
- 2(1) Punctures of pygidium transversely oblong. Apical area of prosternal process without excavation.
- 3(4) Protibia with outer margin deeply emarginate between denticles. Sutural stria of elytra present on basal 1/4. Posterior margin of 10th genital tergite of male genitalia truncate. *G. rotundatus* (Kugelann, 1792)
- 4(3) Protibia with outer margin only feebly emarginate between denticles. Sutural stria of elytra rudimentary on basal 1/6. Posterior margin of 10th genital tergite bifid. *G. communis* (Marseul, 1862)

Gnathoncus nannetensis (Marseul, 1862)

(Fig. 130, 131, 132, 135)

Saprinus nannetensis Marseul, 1862: 499, fig. 2 [IV^e groupe]; Reitter, 1896: 308; Auzat, 1917: 208; Reichardt, 1941: 160, 162; Hinton, 1945: 316, 325; Stockmann, 1957: 60, 73; Witzgall, 1971: 166.

Gnathoncus rotundatus: Thomson, 1862: 242 nec Kugelann, 1792, corrected by Reichardt, 1941: 162; Schmidt, 1885: 317; Ganglbauer, 1899: 379; Reitter, 1904: 36; 1909: 291; Reclaire et van der Wiel, 1936: 234; Horion, 1949: 45.

Hister rotundatus var. "a": Hoffmann, 1803: 87, synonymized by Reichardt, 1941: 162.

Gnathoncus urganensis Reitter, 1896: 307; 1904: 36, synonymized by Bickhardt, 1916: 105.

Gnathoncus rotundatus var. *suturalis*: Ganglbauer, 1899: 380, synonymized by Bickhardt, 1916: 105.

Gnathoncus rotundatus var. *nannetensis*: Roubal et Labler, 1933: 30.

Gnathoncus nannetensis: Gemminger et Harold, 1868: 792; Kryzhanovskij and Reichardt, 1976: 117; Mazur, 1980: 91; 1984: 105; Vienna, 1980: 121; Hisamatsu, 1985b: 222; Yélamos, 1990: 79.

Japanese name: Ô-maru-mame-emma-mushi.

Description. Body length, PPL, male, 2.33 – 3.43 mm (2.73 ± 0.06 , n=20), female, 2.77 – 3.48 mm (3.10 ± 0.04 , n=20), PEL, male, 2.21 – 3.31 mm (2.57 ± 0.06 , n=20), female, 2.47 – 3.14 mm (2.89 ± 0.04 , n=20). Width, male, 1.72 – 2.47 mm (2.04 ± 0.04 , n=20), female, 2.13 – 2.50 mm (2.31 ± 0.02 , n=20). Biometric data are given in Table 33. Body broadly oval and strongly convex. Cuticle shining and black; antennae dark rufopiceous with club rufotestaceous; legs dark

Table 33. Biometric data of *Gnathoncus nannetensis* (Marseul).

	Male	Female
APW	0.66-0.93 (0.77±0.01) 20	0.81-0.93 (0.87±0.01) 20
PPW	1.52-2.11 (1.78±0.03) 20	1.86-2.21 (2.01±0.02) 20
PL	0.81-1.08 (0.91±0.01) 20	0.88-1.15 (1.00±0.02) 20
EL	1.27-1.91 (1.58±0.03) 20	1.57-1.94 (1.77±0.02) 20
EW	1.72-2.47 (2.04±0.04) 20	2.13-2.50 (2.31±0.02) 20
ProW	0.98-1.35 (1.11±0.02) 20	1.10-1.47 (1.29±0.02) 20
ProL	0.17-0.25 (0.20±0.01) 20	0.17-0.29 (0.23±0.01) 20
PyL	0.74-1.13 (0.92±0.02) 20	0.86-1.13 (1.04±0.02) 20
PTL	0.59-0.78 (0.65±0.01) 20	0.64-0.81 (0.71±0.01) 20
MSTL	0.61-0.78 (0.71±0.01) 20	0.69-0.86 (0.77±0.01) 20
MTTL	0.71-0.93 (0.81±0.01) 20	0.78-1.03 (0.91±0.02) 20

reddish brown.

Front sparsely clothed with deep and moderate punctures.

Pronotal sides (Fig. 130A) feebly arcuate and convergent forward on basal 2/3, thence strongly convergent apically. Apical angles obtuse. Marginal stria carinate and complete. Middle of disk moderately punctate, the punctures being separated by 2 – 4 times their diameter, becoming coarser and denser towards sides; base with a single or double transverse rows of punctures, which are nearly as coarse as those on sides. Interspace among these punctures smooth and with occasional microscopic punctures.

Epipleura of elytra not concave. Marginal epipleural stria finely impressed and complete. Another epipleural stria complete, carinate and well impressed between the marginal epipleural and elytral striae. Marginal elytral stria complete, carinate and its apical end extending across elytral apex to medio-apical angle of elytron, then a little extending basally. Surface of epipleura between the marginal epipleural stria and another epipleural one smooth, and with several fine punctures medially; surface between marginal elytral stria and another epipleural one with a row of coarse punctures. Internal subhumeral stria present on medio-apical 1/4. Oblique humeral stria present on basal 1/3 and usually crossed by a number of fine oblique rugae so that it appears to be irregular. First dorsal stria deeply impressed and nearly complete. Second and 4th striae deeply impressed and present on basal 1/2. Third stria a little longer than the 2nd. Fifth stria only represented by a short, curved, transverse line at base. Sutural stria confined to basal region, usually present on basal 1/6. Surface of apical 1/2 – 3/5 of elytra covered with deep oval punctures, which are about as coarse as those on the extreme base of the pronotum

and separated by about 1.5 (1 – 2) times the diameter; surface of basal 1/2 – 2/5 slightly more finely and more sparsely punctate than middle of pronotal disk; extreme apex of elytra (around apical stria) impunctate. Interspace among all discal elytral punctures smooth or nearly so.

Propygidium densely with coarse punctures on apical 1/2, which are as large as those occurring anteriorly to the apical elytral stria, and more finely and more sparsely punctate on basal 1/2. Interspace among the punctures with lightly impressed, fine and irregularly transverse lines, these lines heavily impressed on basal 1/2. Pygidium coarsely and sparsely covered with round and umbilicate punctures, which are

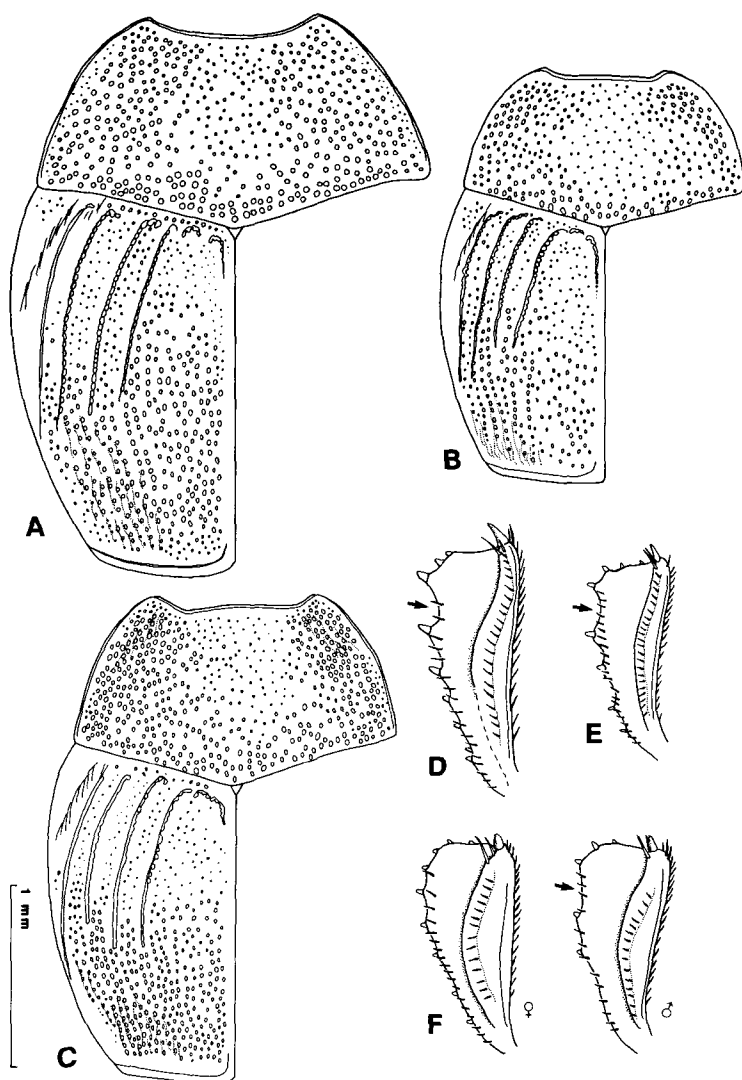


Fig. 130. *Gnathoncus* spp. A – C: Pronotum and left elytron. D – F: Left protibia, dorsal view. A, D: *G. nannetensis* (Marseul). B, E: *G. rotundatus* (Kugelann). C, F: *G. communis* (Marseul).

separated by about 1.5 (1 – 2) times the diameter; on apex those punctures are much finer.

Anterior margin of median portion of prosternum (Fig. 131A) round. Ventral disk of keel even, somewhat broad, and sparsely and moderately punctate. Carinal striae complete, carinate and sinuate, the anterior apex of striae attaining to a large preapical fovea. Descending lateral stria shortly present on medial 1/3 of prosternum, its medio-apical end attaining to apical 1/3 of keel.

Anterior margin of mesosternum bisinuate with a feeble median projection. Marginal stria of mesosternum complete and subcarinate. Disk sparsely and coarsely

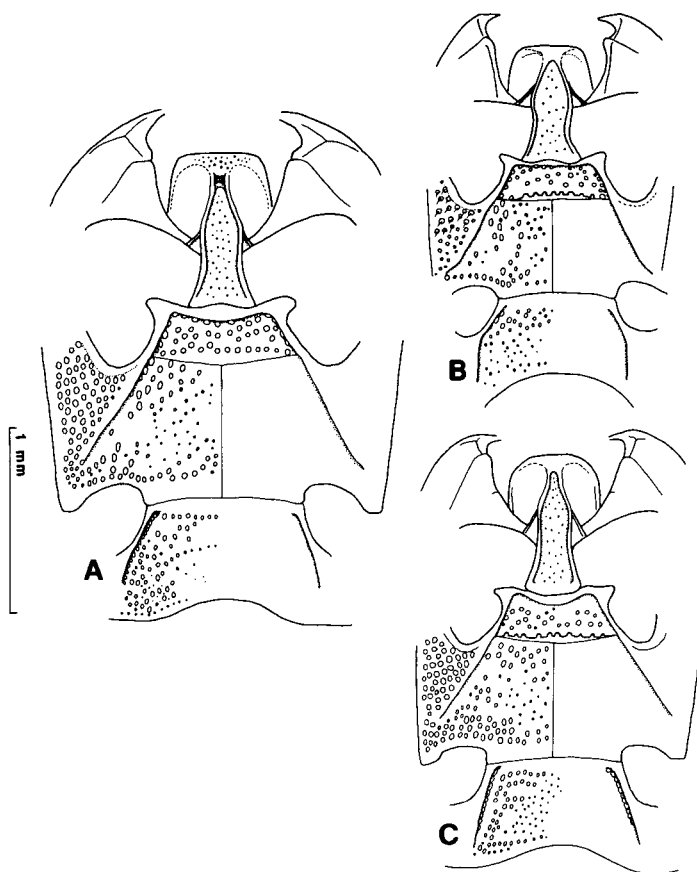


Fig. 131. *Gnathoncus* spp. Prosternum, mesosternum, metasternum and 1st abdominal sternum. A: *G. nannetensis* (Marseul). B: *G. rotundatus* (Kugelann). C: *G. communis* (Marseul).

covered with transverse and setiferous punctures, and interspace among punctures sparsely with microscopic punctures. Meso-metasternal suture indistinctly impressed and accompanied by a coarsely crenate line. Median area of intercoxal disk of metasternum sparsely clothed with fine and setiferous punctures, the punctures being separated by 4 – 7 times their diameter; anterior corner sparsely with large and setiferous punctures, the punctures being sparser and finer on mediolateral area; posterior corner evenly covered with coarse punctures, which are separated by about twice their diameter. Lateral metasternal stria carinate and deeply impressed on lateral 2/3 of the intercoxal disk, the area inside the stria bearing coarse punctures. Lateral disk densely covered with large, round, shallow and setiferous punctures. Metepisternum more densely covered with large punctures than those of lateral disk.

Intercoxal disk of 1st abdominal sternum completely striate, the stria carinate, running along post-coxal cavity on basal 1/2 and straight towards posterior margin on apical 1/2. Surface of disk sparsely and coarsely punctate, the punctures being finer on median area.

Protibia (Fig. 130D) with 9 spinules on outer margin.

Male genitalia as shown in Fig. 132.

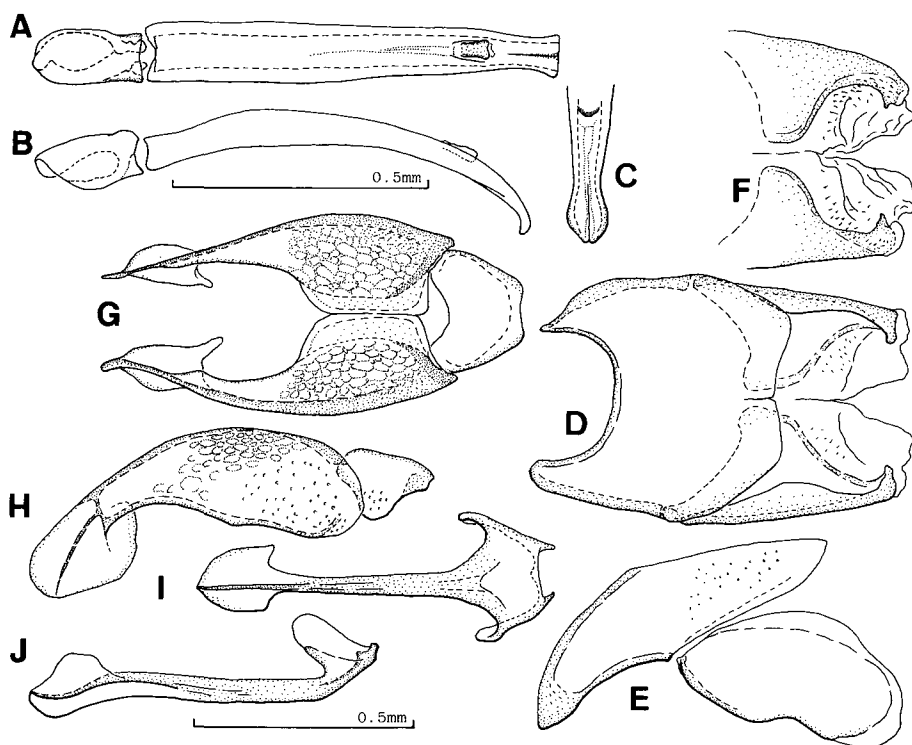


Fig. 132. *Gnathoncus nannetensis* (Marseul) A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Apex of 8th sternum, ventral view. F: Eighth tergite and sternum, lateral view. G: Male genitalia, 9th and 10th tergites, dorsal view. H: Ditto, lateral view. I: Ninth sternum (spicule), dorsal view. J: Ditto, lateral view.

Specimens examined. [Hokkaidô] 3 exs., Futatsu-yama, Shibechea, Kushiro, 3/v/1985, K. Ijima (IJ); 1 ex., Bekkambe-dai, Shibechea, Kushiro, 26/v/1971, K. Ijima (IJ); 1 ex., Usubetsu, Taisetsu-chô, 22/vii/1954, K. Sawada (NA); 1 ex., Kuroishi-daira, Kami-Shihoro, 11/iv/1990, K. Haga; 1 ex., Nopporo, 10/v/1987, M. Ôhara; 59 exs., Ashoro, 30/v/1989, Y. Hayashi, N. Kuhara and O. Suda (from a nest of an owl, *Ketupa blakistoni*).

[Honshû] Tochigi-ken: 1 ex., Miyuki, Utsunomiya-shi, 18/iii/1982, T. Kumazawa (TPM). Kanagawa-ken: 6 exs., Bodai, Tanzawa, 8/iv/1973, Y. Hirano (NA); 3 exs., Ditto, 3/iii/1974, Y. Hirano (NA); 1 ex., Hatano, Kanagawa, 1/ix/1978, H. Takizawa; 2 exs., Zukko-yama, Hatano, 4/vi/1989, A. Yamagami and K. Udagawa; 1 ex., Tanzawa-Ôyama, 14/iv/1973, K. Masumoto. Yamanashi-ken: 1 ex., Narusawa, Fuji, 31/v/1983, M. Abe (NA). Aichi-ken: 1 ex., Okchazama, Owari, i/1946, M. Yasuda (NA). Ôsaka-fu: 2 exs., Nishinari-ku, 2/vii/1949, K. Sawada (NA). Tottori-ken: 1 ex., Takenouchi, 4/iv/1987, H. Daidô.

[Kyûshû] Fukuoka-ken: 1♂, Mt. Adachi, 25/v/1978, S. Nakao (NA); 1 ex., Matsunoe, Moji, 4/v/1936, S. Watanabe (NA). Kumamoto-ken: 1 ex., Uemura, Kuma-gun, 6/vi/1986, K. Kimura (NA); 16 exs., Yokoshima, Tamana, 9/vi/1986, E. Matsui. Miyazaki-ken: 1 ex., Nobeoka, 7/iv/1982, T. Kinoda; 12 exs., Furushiro-chô, Nobeoka, 4/vi/1985, T. Kinoda.

[Sakhalin] 1 ex., Muka, 20/vii/1944, Y. Nishijima (EIHU).

Distribution (Fig. 135). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); nearly the whole Palearctic Region. New to Hokkaidô.

Remarks. *Gnathoncus nannetensis* is a relatively large species; it is similar to

G. rotundatus and *G. communis*, but distinguished by the different shape of the punctures on the pygidium and by the presence of an apical excavation on the prosternal keel (see the key and description).

This cadavericole and coprophile species frequents a wide range of habitats; it occurs on decomposing bodies of chicken, on dung of pig and cow, and so on. It is also found in nests of birds, the fish owl *Ketupa blakistoni* (Seebohm) and the swallow *Hirundo rustica* Linnaeus, for example. Mazur (1981) recorded this species from the nests of the following birds and animals: carrion crow, *Corvus corax* Linnaeus; jackdaw, *Corvus monedula* (Linnaeus); starling, *Sturnus vulgaris* Linnaeus; swift, *Apus apus* (Linnaeus); blue tit, *Parus caeruleus* Linnaeus; rough-legged buzzard, *Buteo lagopus* (Brunn); wood pigeon, *Columba oenas* Linnaeus; badger, *Meles meles* Linnaeus, and *Laetiporus sulphureus* (Bull. et Fr.).

Gnathoncus rotundatus (Kugelann, 1792)
(Fig. 130, 131, 133, 135)

Hister rotundatus Kugelann, 1792: 304.

Saprinus (*Gnathoncus*) *rotundatus*: Marseul, 1873: 221 [New to Japan; Nangasaki].

Hister nanus Scriba, 1790: 73, synonymized by Hoffmann, 1803: 87, the synonymy verified by Mazur, 1984: 105.

Gnathoncus nanus: Reichardt, 1941: 191; Mazur, 1973: 27; Kryzhanovskij and Reichardt, 1976: 116; Vienna, 1980: 120; Hisamatsu, 1985b: 222.

Gnathoncus rotundatus: Jacquelin-Duval, 1858: 112; Mazur, 1980: 88; 1984: 105.

For detailed synonymy, see Mazur (1984: 105).

Japanese name: Maru-mame-emma-mushi.

Description. Body length, PPL, 1.91 – 2.45 mm (2.15 ± 0.04 , $n=17$), PEL, 1.84 – 2.35 mm (2.05 ± 0.04 , $n=17$). Width, 1.42 – 1.76 mm (1.58 ± 0.02 , $n=17$). Biometric data are given in Table 34. Body broadly oval and feebly depressed medially. Cuticle shining and black; antennae, mandibles, tibiae dark rufopiceous, and club of antennae rufotestaceous.

Front sparsely covered with deep and moderate punctures, interspace among the punctures sparsely clothed with fine punctures.

Pronotal sides (Fig. 130B) feebly arcuate and convergent forward on basal 3/4, thence strongly convergent apically. Apical angles obtuse. Marginal stria feebly carinate and complete. Disk sparsely and evenly covered with coarse, round and deep punctures, which become coarser on the basal 1/2; interspace among the punctures sparsely and finely punctate. Antescutellar area feebly depressed and coarsely and somewhat densely punctate.

Epipleura of elytra not concave. Marginal epipleural stria finely and clearly impressed and complete. Another epipleural stria complete, carinate and clearly impressed between marginal epipleural and elytral striae. Marginal elytral stria complete and carinate, its basal end inwardly bent, and apical end extending across elytral apex to medio-apical angle of elytron, then a little extending anteriorly. Surface of epipleura and marginal elytral striae with a row of coarse punctures. Internal subhumeral stria rudimentary on basal 1/3 and usually crossed by a number of fine, oblique rugae. First dorsal stria (Fig. 130B) deeply impressed on basal 3/4. Second to 4th dorsal striae

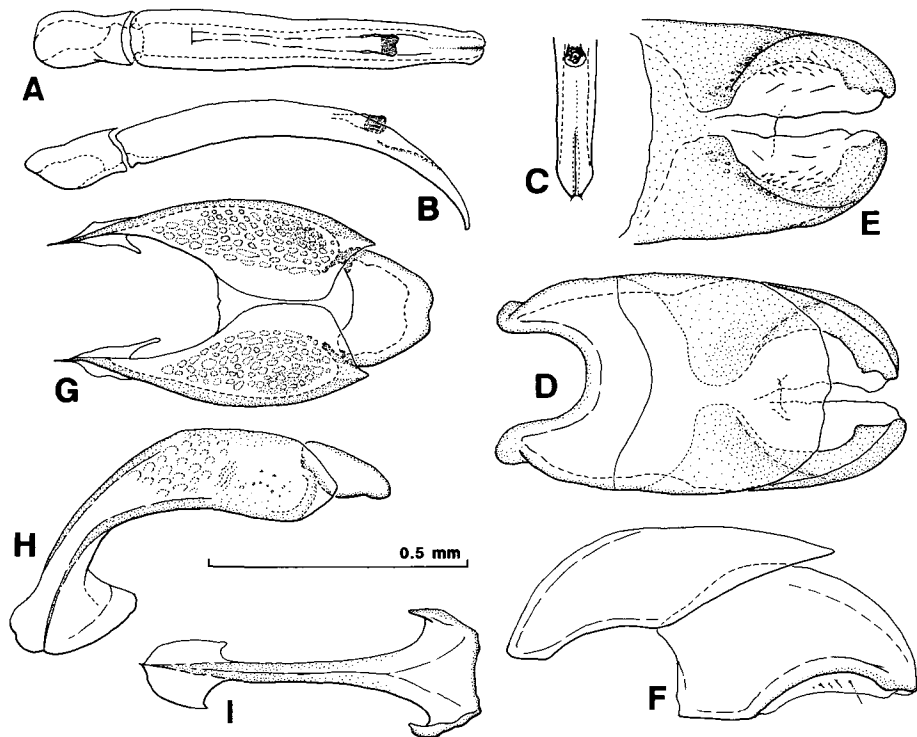


Fig. 133. *Gnathoncus rotundatus* (Kugelann) A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Apex of 8th sternum, ventral view. F: Eighth tergite and sternum, lateral view. G: Male genitalia, 9th and 10th tergites, dorsal view. H: Ditto, lateral view. I: Ninth sternum (spicule), dorsal view.

Table 34. Biometric data of *Gnathoncus rotundatus* (Kugelann) and *G. communis* (Marseul).

	<i>G. rotundatus</i>	<i>G. communis</i>
APW	0.51-0.74 (0.63± 0.01) 17	0.64-0.88 (0.72±0.02) 10
PPW	1.23-1.52 (1.36± 0.02) 17	1.35-1.62 (1.49±0.02) 10
PL	0.64-0.83 (0.75± 0.01) 17	0.74-0.91 (0.80±0.02) 10
EL	1.15-1.42 (1.30± 0.02) 17	1.23-1.64 (1.36±0.04) 10
EW	1.42-1.76 (1.58± 0.02) 17	1.47-1.89 (1.69±0.04) 10
ProW	0.78-0.98 (0.90± 0.01) 17	0.81-1.05 (0.94±0.02) 10
ProL	0.15-0.25 (0.19± 0.01) 17	0.15-0.25 (0.20±0.01) 10
PyL	0.74-0.88 (0.79± 0.01) 17	0.64-0.93 (0.78±0.03) 10
PTL	0.49-0.56 (0.53±0.005) 17	0.47-0.64 (0.54±0.02) 10
MSTL	0.54-0.64 (0.59± 0.01) 17	0.54-0.69 (0.61±0.01) 10
MITL	0.61-0.76 (0.69± 0.01) 17	0.66-0.78 (0.73±0.01) 10

deeply impressed, crenate and present on basal 1/2, but usually a little extending beyond the half. Fifth stria represented only by a short, curved, transverse line at base. Sutureal stria usually present on basal 1/4, sometimes shorter than basal 1/6. Surface of apical 1/2 – 2/3 of elytra covered with longitudinal, oblong, deep punctures, which are about as coarse as those of the extreme base of the pronotum and separated by 2 – 3 times their diameter; surface of basal 1/2 – 1/3 finely and sparsely punctate, the punctures being separated by 4 – 7 times their diameter; apical transverse region (around apical stria) densely and longitudinally rugate; extreme apex of elytra impunctate. Interspace among discal elytral punctures smooth and rarely microscopically punctate.

Pygidium densely covered with coarse and transverse oblong punctures on apical 1/2, which are as large as those occurring posteriorly to apical elytral stria, and more finely and sparsely punctate on basal 1/2. Interspace among the punctures with lightly impressed, fine and irregularly transverse lines, these lines being heavily impressed on basal 1/2. Pygidium coarsely and densely covered with transverse oblong punctures, the punctures being separated by their longer diameter to twice the diameter and their posterior margin usually emarginate; on apex those punctures are much finer.

Anterior margin of median portion of prosternum (Fig. 131B) round. Ventral disk of keel even, broad and sparsely and finely punctate; the punctures being separated by about 3 – 7 times their diameter; ground surface densely covered with microscopic and longitudinal rugae except medially. Carinal stria complete, carinate and sinuate. Keel without preapical fovea. Descending lateral stria short and present on median 1/3 of prosternum, its apical end attaining to medio-apical 1/3 of keel.

Anterior margin of mesosternum feebly bisinuate with a slight projection. Marginal stria of mesosternum strongly carinate and complete. Disk sparsely covered with moderate and round punctures which are separated by 4 – 6 times their diameter; interspace among the punctures sparsely and finely punctate. Meso-metasternal suture strongly impressed and densely crenate, usually the lateral 1/6 reduced. Intercoxal disk of metasternum sparsely clothed with fine punctures which are separated by 5 – 10 times their diameter and become coarser in the lateral and posterior areas along the marginal suture or lateral stria. Lateral metasternal stria carinate and deeply impressed on lateral 3/4 of the intercoxal disk. Lateral disk densely covered with large, round and setiferous punctures, which become denser posteriorly. Metepisternum more densely covered with large punctures than on lateral disk.

Intercoxal disk of 1st abdominal sternum almost completely striate, the stria not attaining the posterior margin, deeply impressed and carinate. Surface of disk evenly covered with coarse longitudinal oblong and deep punctures; interspace among the punctures sparsely clothed with microscopic punctures.

Protibia (Fig. 130E) with 8 denticles on outer margin, the interspace between the apical 3th and 4th denticles strongly emarginate.

Male genitalia as shown in Fig. 133.

Specimens examined. [Hokkaidô] 1 ex., Futatsu-yama, Shibecha, Kushiro, 16/v/1986, K. Ijima (IJ); 10 exs., Shimohoro, Tsurui, Kushiro moor, 1/vi/1992, M. Ôhara; 9 exs., Ditto, 9/vi/1992, M. Ôhara; 1 ex., Kushiro Zoo, Yamahana, Kushiro, 9/vi/1992, M. Ôhara.

[Honshû] Ôsaka-fu: 1 ex., Nishinari, 15/v/1950, K. Sawada (NA).

Distribution (Fig. 135). Japan (Hokkaidô, Honshû); nearly whole Holarctic Region, Taiwan, South Africa.

Remarks. *Gnathoncus rotundatus* is quite similar to *G. communis* in all

external characters examined, and the differences are very subtle; the shape of the protibia and the male genitalia should be used to distinguish these 2 species positively.

Gnathoncus rotundatus is coprophile and known from a wide range of habitats. Mazur (1981) recorded this species from the nests of the following birds and mammals: owl, *Strix* Linnaeus; hoopoe, *Upupa epops* Linnaeus; hooded-crow, *Corvus corone cornix* Linnaeus; starling, *Sturnus vulgaris* Linnaeus; squirrel, *Sciurus vulgaris* Linnaeus; rabbit, *Oryctolagus cuniculus* (Linnaeus), and hamster, *Cricetus cricetus* (Linnaeus).

Gnathoncus communis (Marseul, 1862)

(Fig. 130, 131, 134, 135)

Saprinus communis Marseul, 1862: 501, synonymized with *Gnathoncus rotundatus* by Horn, 1873: 314, but revived by Mazur, 1990: 744.

Gnathoncus communis: Mazur, 1990, 744 [Australia].

Gnathoncus schmidtii Reitter, 1894: 239; Stockmann, 1957: 75, fig. 4, 9, 14, 19, 24; Halstead, 1963: 13, fig. 27, 27b-d; Vienna, 1980: 123, fig. 45c, i, 46c, synonymized by Mazur, 1990: 744.

Gnathoncus nidicola Joy, 1907: 133, tab., V, fig. 2; Auzat, 1917: 208; Reclaire et van der Wiel, 1936: 208, synonymized with *G. schmidtii* by Stockmann, 1957: 73.

Gnathoncus nidicola var. *auzati* Pic, 1918: 9.

Gnathoncus punctor: Reichardt, 1941: 164, fig. 75A, 77B, nec Reitter, 1896:307; Hinton, 1945: 326, fig. 32, 34, 36, 41, 42, 45 [male genitalia], corrected by Stockmann, 1957: 73.

Gnathoncus idiopygus Casey, 1916: 255, synonymized by Mazur, 1990: 744.

Japanese name: Nise-maru-mame-emma-mushi.

Description. Body length, PPL, 2.21 – 2.57 mm (2.34 ± 0.04 , n=10), PEL, 2.01 – 2.40 mm (2.19 ± 0.03 , n=10). Width, 1.47 – 1.89 mm (1.69 ± 0.04 , n=10). Biometric data are given in Table 34. Body broadly oval and strongly convex. Cuticle shining and black, but a few specimens very dark rufopiceous; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Front of head sparsely with fine and transverse punctures, and with round punctures posteriorly.

Pronotal sides (Fig. 130C) feebly arcuate and convergent forward on basal 2/3, thence feebly convergent apically. Apical angles obtuse. Marginal stria carinate and complete, its anterior portion weakly carinate and indistinct. Middle of disk finely punctate, the punctures being separated by 3 – 5 times their diameter; towards sides the punctures become coarser and denser; base sparsely and coarsely punctate, the punctures being nearly as coarse as those of sides. Interspace among punctures smoother and with occasional microscopic punctures.

Epipleura of elytra not concave. Marginal epipleural stria finely impressed and complete. Another epipleural stria complete and subcarinate between the marginal epipleural and elytral striae. Marginal elytral stria complete and carinate; its apical end extending across elytral apex to medio-apical angle of elytron and then a little extending basally. Surface between marginal epipleural stria and another epipleural one with 2 rows of longitudinal-oblong and coarse punctures. Subhumeral stria present on median 1/3. Oblique humeral stria (Fig. 130C) present on basal 1/3, and usually crossed by a number of fine, oblique rugae so that it appears to be irregular. First and 3rd dorsal striae deeply impressed on basal 2/3 and carinate. Second and 4th dorsal striae a little

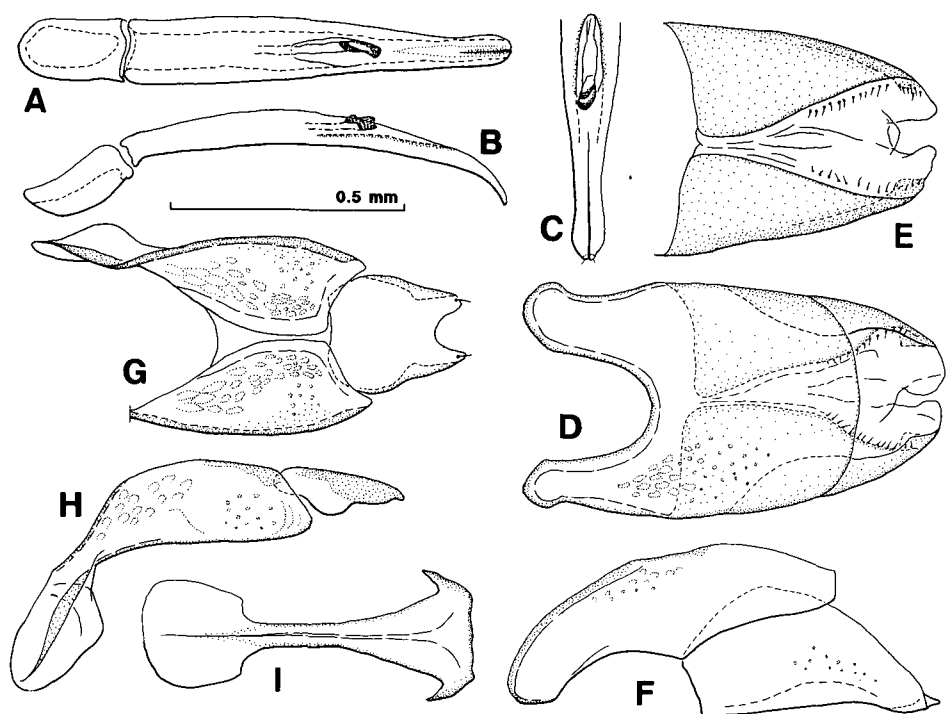


Fig. 134. *Gnathoncus communis* (Marseul). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Apex of 8th sternum, ventral view. F: Eighth tergite and sternum, lateral view. G: Male genitalia, 9th and 10th tergites, dorsal view. H: Ditto, lateral view. I: Ninth sternum (spicule), dorsal view.

shorter than the 3rd. Fifth and sutural striae only represented by a short, curved, transverse line at base. Surface of apical 1/2 of elytra covered with coarse, oval punctures which are about as coarse as those of the extreme base of the pronotum and separated by about 1.5 (1 – 2) times the diameter; surface of basal 1/2 slightly more finely and distinctly more separately punctate than middle of pronotal disk; extreme apex of elytra (around apical stria) impunctate. Interspace among all discal elytral punctures smooth or nearly so.

Propygidium densely covered with coarse, round punctures on apical 1/2 which are as large as those occurring anteriorly to apical elytral stria and finely and sparsely punctate on basal 1/2. Interspace among punctures on basal 1/2 with lightly impressed, fine and irregularly transverse lines. Pygidium densely and coarsely covered with transverse-oblong and umbilicate punctures, which become denser apically and round on the mediobasal region.

Anterior margin of median portion of prosternum (Fig. 131C) round. Ventral disk of keel even, sparsely covered with moderate and longitudinal-oblong punctures. Carinal striae complete, strongly carinate and sinuate, the anterior ends united with each other in an arch. Preapical fovea absent. Descending lateral stria shortly present on median 1/3, its apical end attaining to apical 1/3 of keel.

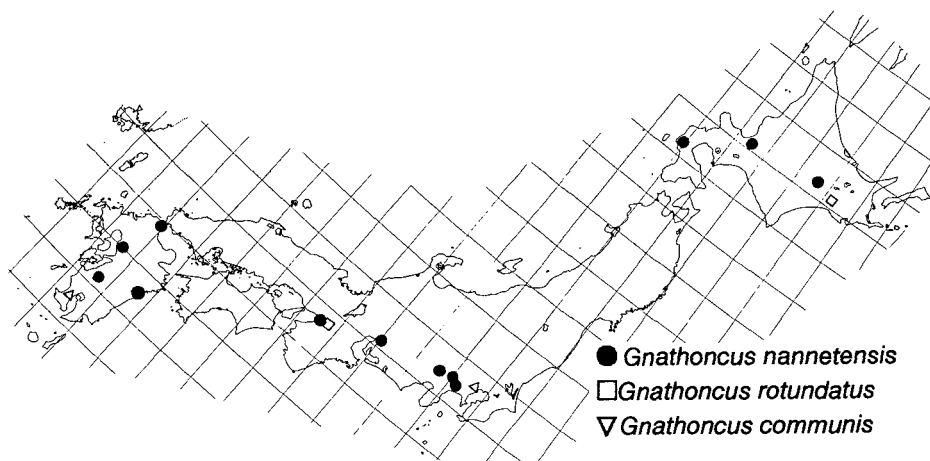


Fig. 135. Collection sites of *Gnathoncus* spp. in Japan.

Anterior margin of mesosternum bisinuate with a feeble median projection. Marginal stria of mesosternum complete and subcarinate. Disk sparsely covered with large and round punctures, which are separated by 2 – 3 times their diameter. Meso-metasternal suture slightly impressed and accompanied by a coarsely and sparsely crenate line. Median area of intercoxal disk finely punctate, the punctures being separated by 3 – 4 times their diameter; lateral and posterior 1/4 sparsely covered with large, round and setiferous punctures, these being a little larger than those of mesosternal disk; interspace among large punctures sparsely clothed with fine punctures. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and usually present on basal 2/3. Lateral disk densely covered with large, round and setiferous punctures, which are somewhat larger than those of the intercoxal disk. Metepisternum densely punctate, the punctures being as large as those of lateral disk.

Intercoxal disk of 1st abdominal sternum completely striate. Surface of disk sparsely and finely punctate on median area, and coarsely punctate laterally, the punctures on lateral areas being smaller than the punctures of mesosternal disk.

Protibia (Fig. 130F) with 7 spinules on outer margin, the apical-outer angle bearing 3 large spinules, and only feebly emarginate between spinules.

Male genitalia as shown in Fig. 134.

Specimens examined. [Honshû] Tôkyô-to: 10 exs., Setagaya, 18/ix/1949, Ôhira (NA).

[Kyûshû] Kagoshima-ken: 1♂, Uenosono, Kagoshima, 2/xi/1982, T. & T. Nakane (NA).

Distribution (Fig. 135). Japan (Honshû, Kyûshû); North America; Europe; Caucasus; Central Asia; Sakhalin; Egypt; Australia. New to Japan.

Remarks. *Gnathoncus communis* is quite similar to *G. rotundatus* in all external characters, but the 2 species can positively be distinguished by the shape of the protibia and the male genitalia.

Little is known about the habitat of this species in Japan. Mazur (1981) recorded *G. communis* in the nests of the following birds: carrion crow, *Corvus corax*

Linnaeus; jackdaw, *Corvus monedula* (Linnaeus); tawny owl, *Strix aluco* Linnaeus and goshawk, *Accipiter gentilis* (Linnaeus).

GENUS SAPRINUS ERICHSON, 1834

Saprinus Erichson, 1834: 172 [type species: *Hister nitidulus* Fabricius, 1801: 85, designated by Westwood, 1840: 22].

Plesioprinus Houlbert et Monnot, 1923: 72 (nom. nud.), synonymized by Cooman, 1947: 428.

Key to the Japanese species of the genus *Saprinus*

- 1(4) Basal 1/2 of interval between 1st and 4th dorsal elytral striae coarsely punctate.
 - 2(3) Pygidium wholly punctate, without impunctate band on longitudinal mid line. Mesosternum coarsely punctate. *S. cyaneus auricollis* Marseul, 1855
 - 3(2) Pygidium with an impunctate band on longitudinal mid line. Mesosternum without coarse punctures. *S. splendens* (Paykull, 1811)
 - 4(1) Basal 1/2 of interval between 1st and 4th dorsal elytral striae smooth, at least finely punctate.
 - 5(6) Third elytral dorsal stria short, usually 1/2 as long as 4th or 2nd stria.
..... *S. planiusculus* Motschulsky, 1849
 - 6(5) Third elytral dorsal stria as long as 4th or 2nd stria. *S. niponicus* Dahlgren, 1962
- Another species, *Saprinus pecuinus*, has been recorded from Japan.

SUBGENUS SAPRINUS ERICHSON, 1834

Saprinus (Saprinus) cyaneus auricollis Marseul, 1855 (Fig. 136, 137)

Saprinus auricollis Marseul, 1855: 390 [Iles Philippines]; Dahlgren 1971: 49; Nakane, 1977: 148 [Ogasawara Isles].

Saprinus cyaneocupreus Marseul, 1864: 337, synonymized by Dahlgren, 1967: 220.

Japanese name: Ko-ruri-emma-mushi.

Description. Body length and biometric data are as follows: PPL 4.95, PEL 3.86, APW 1.33, PPW 3.47, PL 1.52, EL 2.28, EW 3.24, ProW 2.00, ProL 0.57, PyL 1.52, PTL 1.19, MSTL 1.19, MTTL 1.62. Body broadly oval and strongly convex. Cuticle strongly shining with purple metallic lustre on pronotum and dark green metallic lustre on elytra; funicle of antennae and tarsi dark rufopiceous; tibiae black.

Frontal stria of head complete and carinate. Supraorbital stria complete and evenly arcuate. Disk of front sparsely covered with moderate punctures, which are separated by 2 – 3 times their diameter; interspace among the punctures with microscopic punctures. Epistoma sparsely punctate, the punctures being a little coarser than those of frontal disk. Labrum broadly depressed anteriorly.

Pronotal sides (Fig. 136) evenly arcuate and feebly convergent forward on basal 3/4, thence strongly arcuate and convergent apically. Apical angles obtusely angulate. Marginal stria carinate and complete. Disk densely covered with large, round, and deep punctures on longitudinal area along the sides, the punctures becoming finer on basal 1/4; interspace among the large punctures smooth, occasionally clothed with microscopic punctures; narrow lateral band along the side with dense and fine punctures; base with 2 or 3 rows of large, deep and longitudinal punctures, the rows

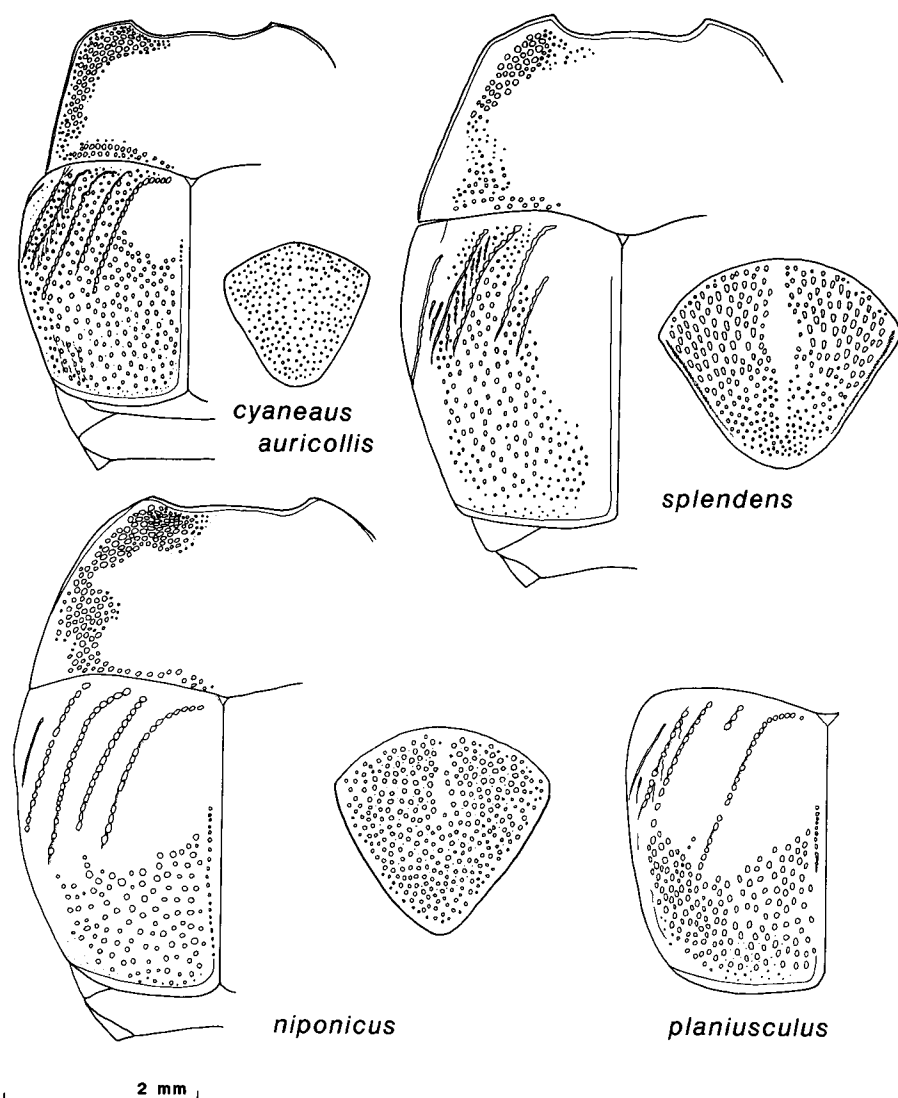


Fig. 136. *Saprinus* spp., dorsal view of pronotum and left elytron, and pygidia.

absent on median fifth of posterior margin of pronotum, and becoming finer laterally; elsewhere sparsely clothed with microscopic punctures.

Epipleura of elytra even; surface between epipleural and elytral marginal striae smooth, shining, with a row consisting of sparse and fine punctures; finely punctate inside marginal elytral stria, the punctures being separated by 2 – 3 times their diameter. Marginal epipleural stria lightly carinate and complete. Marginal elytral stria heavily carinate, complete and densely with coarse punctures; its apical end extending inwards, reaching lateral 1/4 of posterior margin of elytron. External subhumeral stria present on basal 1/4. Internal subhumeral stria nearly complete and densely crenate. Oblique humeral stria present on basal 1/3 and its apical portion fused with the basal

portion (nearly on basal 1/3 of elytron) of internal subhumeral stria, so that they appear to be a single stria. First to 4th dorsal striae present on about basal 1/2 and densely crenate with coarse punctures; 2nd a little longer than the 1st; 3rd a little shorter than the 1st; 4th as long as the 1st. Fifth dorsal stria absent. Sutural stria strongly carinate, sparsely crenate and abbreviated on basal 1/4. Surface of elytra, excepting flanks, mediobasal area and extreme apices (around apical stria) densely covered with coarse punctures, which are 1/2 as coarse as those of the longitudinal lateral area of the pronotum, becoming finer apically, and separated by about 1.5 (1 – 2) times the diameter; interspace among the punctures occasionally with fine punctures; flanks evenly covered with fine punctures which are separated by 2 or 3 times their diameter; mediobasal area, that is, basal 1/2 of elytra inside 4th dorsal stria sparsely clothed with microscopic punctures; area inside the apical stria densely covered with fine punctures.

Propygidium densely covered with coarse, round and shallow punctures, which are as coarse as the coarse elytral punctures; interspace among the punctures with lightly impressed, fine and irregularly transverse alutaceous microsculptures, and sometimes with fine punctures. Pygidium (Fig. 136) sparsely with deep punctures, which are as coarse as the propygidial ones; interspace among the punctures with alutaceous microsculpture basally, but elsewhere smooth and sometimes with fine punctures.

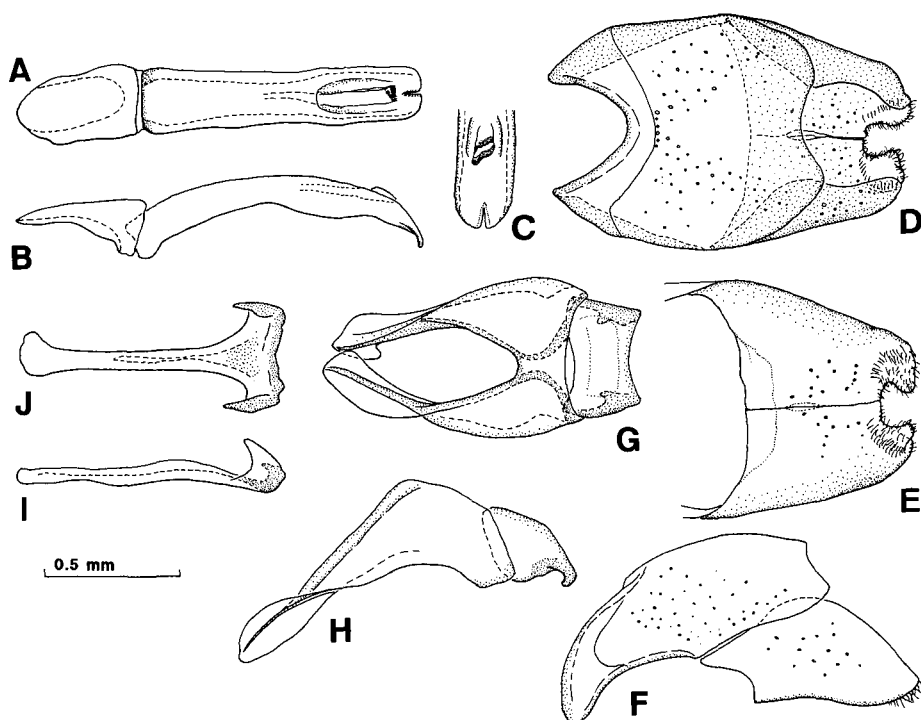


Fig. 137. *Saprinus (Saprinus) cyaneus auricollis* Marseul. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Apex of 8th sternum, ventral view. F: Eighth tergite and sternum, lateral view. G: Male genitalia, 9th and 10th tergites, dorsal view. H: Ditto, lateral view. I: Ninth sternum (spicule), lateral view. J: Ditto, dorsal view.

Anterior margin of median portion of prosternum nearly straight. Ventral disk of keel even, but slightly descending on apical 1/6; surface of disk sparsely with fine punctures. Anterior marginal stria strongly carinate, nearly straight, but feebly and inwardly arcuate medially. Carinal striae strongly carinate and complete. Descending lateral stria strongly carinate, its apical end attaining to apical 1/6 of keel.

Anterior margin of mesosternum deeply emarginate medially. Marginal stria complete and strongly carinate. Disk sparsely with coarse punctures and other fine punctures intermingled among coarse ones. Meso-metasternal suture lightly impressed, and with a line which is densely and coarsely crenate. Intercostal disk of metasternum sparsely clothed with microscopic punctures, these becoming coarse basally; a transverse apical band densely with coarse punctures. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and present on basal 3/4. Lateral disk densely covered with large, round and shallow punctures, these progressively becoming sparser and finer apically. Metepisternum broad, and densely covered with large, shallow and longitudinal punctures.

Intercostal disk of 1st abdominal sternum sparsely with microscopic punctures except along anterior margin and behind anterior corner, these parts being densely and coarsely punctate; also with an apical transverse row consisting of moderate punctures. Lateral stria of the disk strongly carinate basally and complete.

Protibia with 9 spinules on outer margin, the apical 3 and basal 2 small.

Male genitalia as shown in Fig. 137.

Specimens examined. [Ogasawara Isles] 1♂, Bonin Is., vii/1969 (NA).

Distribution. Japan (Ogasawara Isles); Philippines; Bali; New Guinea; Volcano Is.; Buru Is.

Remarks. *Saprinus cyaneus auricollis* can easily be recognized by the color of the body, which is purple on the pronotum and green on the elytra.

Saprinus (Saprinus) niponicus Dahlgren, 1962
(Fig. 136, 138, 141)

Saprinus niponicus Dahlgren, 1962: 245 [Japan: Nagano (holotype and a paratype); Hachinohe; Aomori; Kiso-Fukushima; Hirayu; Gifu; Hiogo; Nagasaki]; Mazur, 1970: 52; 1984: 55; Kryzhanovskij and Reichardt, 1976: 158; Hisamatsu, 1985b: 223.

Japanese name: Nise-dôgane-emma-mushi.

Description. Body length, PPL, male, 4.05 – 5.71 mm (4.92 ± 0.09 , n=20), female, 4.52 – 6.66 mm (5.89 ± 0.12 , n=20), PEL, male, 3.33 – 4.81 mm (4.33 ± 0.08 , n=20), female, 3.90 – 5.33 mm (4.82 ± 0.07 , n=20). Width, male, 3.00 – 4.24 mm (3.80 ± 0.07 , n=20), female, 3.38 – 4.71 mm (4.28 ± 0.07 , n=20). Biometric data are given in Table 35. Body broadly oval and strongly convex. Cuticle very strongly shining with brassy lustre and black; tarsi and funicle of antennae dark rufopiceous.

Frontal stria of head weakly carinate, complete, sometimes interrupted medially. Supraorbital stria well impressed and complete. Disk of front sparsely covered with moderate punctures, the punctures much sparser on basal 1/2; interspace among these punctures smooth or nearly so. Epistoma more densely punctate than on anterior area of front. Labrum deeply depressed medially.

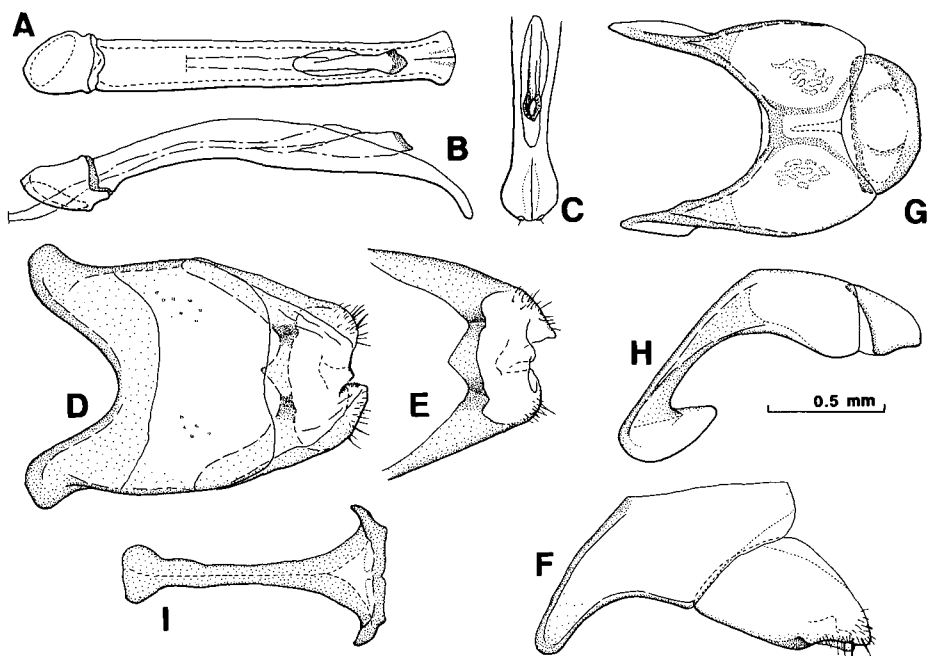


Fig. 138. *Saprinus (Saprinus) niponicus* Dahlgren. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Apex of 8th sternum, ventral view. F: Eighth tergite and sternum, lateral view. G: Male genitalia, 9th and 10th tergites, dorsal view. H: Ditto, lateral view. I: Ninth sternum (spicule), dorsal view.

Pronotal sides (Fig. 136) evenly arcuate and convergent forward on basal 5/6, thence strongly convergent apically. Apical angles obtuse. Marginal stria lightly carinate and complete. Disk smooth, but densely, coarsely and deeply punctate along the sides except on basal 1/4, sparsely clothed with fine punctures in a narrow band outside the coarsely punctate area; base with 1 or 2 irregular rows of large punctures, the rows absent on lateral 1/6 and the punctures sparse on median 1/3; elsewhere extremely finely, sparsely punctate; area behind eyes feebly depressed.

Epipleura of elytra even; surface between elytral and epipleural marginal striae with 2 rows consisting of moderate and sparse punctures; area inside elytral marginal stria sparsely and moderately punctate, the punctures being denser on apical 1/3. Marginal epipleural stria complete and distinctly carinate. Marginal elytral stria strongly carinate, area inside it being crenate with coarse punctures; its apical end extending along the posterior margin of elytron to medio-apical angle of elytron and then a little extending basally. External subhumeral stria confined basally. Internal subhumeral stria present on median 1/3, but frequently abbreviated basally and sometimes absent. Oblique humeral stria distinctly impressed on basal 1/3. First to 4th dorsal striae densely crenate with coarse punctures, deeply impressed, and present on basal 2/3. Fifth dorsal stria absent. Sutural stria shortly represented medially by a row of about 4 – 7 coarse punctures. Surface of apical 1/3 of elytra covered with coarse, oval

punctures, which are finer than those on the longitudinal area along the pronotal sides, and separated by about 1.5 (1 – 2) times the diameter, the punctured area usually expanded basally to nearly sutural area; interval between 1st and 2nd dorsal striae usually with several longitudinal and short lines; surface of basal 2/3 smooth, sparsely clothed with microscopic punctures; extreme apex of elytra (around apical stria) sparsely and finely punctate; interspace among all discal punctures smooth, occasionally clothed with microscopic punctures.

Propygidium densely covered with coarse punctures, which are as coarse as those of the apical 1/3 of the elytra but somewhat shallower, and become finer on the basal 1/3; interspace among punctures occasionally and finely punctate, and with lightly impressed, fine and irregularly alutaceous microsculptures. Pygidium (Fig. 136) densely covered with punctures, which are a little coarser than the propygidial ones and progressively become finer apically.

Anterior margin of median portion of prosternum straight. Ventral disk of keel even, sparsely clothed with microscopic punctures, which are coarser laterally. Anterior marginal stria of keel deeply impressed, carinate and complete. Carinal striae complete, divergent anteriorly and posteriorly, and nearly straight on apical 1/3. Descending lateral stria strongly carinate, its apical end attaining to apical 1/3 of carinal stria.

Anterior margin of mesosternum broadly and feebly emarginate medially. Marginal stria complete and strongly carinate. Disk sparsely clothed with coarse punctures, sometimes the punctures sparser and finer medially. Meso-metasternal suture lightly impressed, with a strongly crenate line. Intercostal disk of metasternum feebly convex, smooth, but with coarse and dense punctures along the lateral stria, and with coarse and dense punctures in a transverse apical band. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and usually present on basal 1/2. Lateral metasternal disk densely covered with round, shallow, large and setiferous punctures, which become smaller on the apical 1/3, with fine punctures intermingled. Metepisternum more densely punctate than those of lateral disk of metasternum, the punctures becoming sparser on apical 1/2.

Intercostal disk of 1st abdominal sternum with strongly carinate lateral stria on basal 2/3; sparsely clothed with fine punctures on medio-apical area except for a narrow band along posterior margin with a row of coarse punctures; elsewhere densely and coarsely punctate.

Protibia with 13 spines on outer margin, the apical 2 and basal 3 small.

Male genitalia as shown in Fig. 138.

Specimens examined. [Hokkaidô] 3 exs., Futatsu-yama, Shibechea, Kushiro, 1/viii/1954, 17/vi/1972, 15/viii/1987, K. Ijima (IJ); 1 ex., Shiriuchi, Oshima, 11/viii/1976, T. Kumata et al. (EIHU); 3 exs., Shibetsu, 24/vii/1966, H. Takizawa; 2 exs., Kamui-kotan, near Asahikawa, 7/viii/1987, M. Ôhara; 1 ex., Mt. Yûbari, 10/viii/1966, H. Takizawa; 15 exs., Hokkaidô Univ., Sapporo, 7, 27/vi/1985, M. Ôhara; 8 exs., Misumai, Sapporo, 10 & 12/vii/1991, K. Sayama; 3 exs., Toyotaki, Sapporo, 3/ix/1987, M. Ôhara; 1 ex., Hirafu side, alt. 350 m, Mt. Yôtei, Kutchan, 20/viii/1993, M. Ôhara; 3 exs., Tôya-Naka-no-shima, Abuta, 29/vii-1/viii/1993, S. Hori (HOR).

[Honshû] Aomori-ken: Paratype, 1♂, Hachinohe, 8/vi/1946, A. Fukuda (NA). Fukushima-ken: 1 ex., Yunohana, Tateiwa, Minami-Aizu, 8/vii/1948, Y. Kurosawa (NSMT). Gumma-ken: 1 ex., Sarugakyô, 6/vi/1966, M. Ishida. Tôkyô-to: 2♂♂ 1♀, Tôkyô, 19/viii/1972, no collector's name; 2 exs., Kunitachi, 21/vi/1963, S. Nomura (NSMT). Kanagawa-ken: 1 ex., Tozuka, Yokohama, 21/v/1972, no collector's name. Yamanashi-ken: 1 ex., Mt. Daibosatsu, 22/vii/1963, T. Okumura; 1

Table 35. Biometric data of *Saprinus niponicus* Dahlgren.

	Male	Female
APW	1.09-1.52 (1.35±0.02) 20	1.24-1.67 (1.49±0.02) 20
PPW	2.76-3.95 (3.51±0.07) 20	2.95-4.33 (3.88±0.07) 20
PL	1.29-2.00 (1.64±0.04) 20	1.33-2.14 (1.83±0.04) 20
EL	2.00-2.86 (2.60±0.05) 20	2.38-3.05 (2.87±0.04) 20
EW	3.00-4.24 (3.80±0.07) 20	3.38-4.71 (4.28±0.07) 20
ProW	1.81-2.67 (2.34±0.05) 20	2.00-3.09 (2.58±0.05) 20
ProL	0.33-0.52 (0.45±0.01) 20	0.43-0.62 (0.48±0.01) 20
PyL	1.43-1.90 (1.68±0.03) 20	1.43-2.33 (2.09±0.04) 20
PTL	1.09-1.48 (1.35±0.02) 20	1.00-1.67 (1.45±0.03) 20
MSTL	1.24-1.57 (1.42±0.02) 20	1.05-1.71 (1.50±0.03) 20
MTTL	1.33-1.90 (1.67±0.03) 20	1.14-1.95 (1.79±0.04) 20

ex., Sagashiro Spa., 28-30/vii/1961, S. Nomura (NSMT). Nagano-ken: 1♂, Fukushima, Kiso, 11-12/vi/1946, T. Nakane (NA); 2 exs., Kami-Kôchi, Shinano, 21-28/vii/1947, S. Ôsawa (NA); 4 exs., Koma-ga-take, Kiso, 4, 5/viii/1946, S. Ôsawa (NA). Gifu-ken: Paratypes, 1♂1♀, Hirayu, Hida, 24/vii/1946, M. Hayashi (NA).

[Kyûshû] Miyazaki-ken: 2 exs., Koiwaya, Kitagawa-chô, 14/v/1993, T. Kinoda.

Distribution (Fig. 141). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû); Primorskij Kray; Korea.

Remarks. *Saprinus niponicus* resembles *S. planiusculus*; however, the long 3rd dorsal elytral stria and the shape of the 8th sternum of the male genitalia of *S. niponicus* will distinguish it from *S. planiusculus*.

This species is cadavericolous.

Saprinus (Saprinus) pecuinus Marseul, 1855

Saprinus pecuinus Marseul, 1855: 391; 1873: 221 [Kagoshima, Kiu-Siu, Japon]; Mazur, 1984: 56.

Specimens examined. No material of this species has been available.

Distribution. China; Japan (?).

Remarks. Marseul's record (1873) remains in doubt. I have had no opportunity to check his specimens.

Saprinus (Saprinus) planiusculus Motschulsky, 1849

(Fig. 136, 139, 141)

Saprinus planiusculus Motschulsky, 1849: 97 [Kirgiz SSR]; Mazur, 1984: 56.

Saprinus cuspidatus Ihssen, 1949: 183, synonymized by Kryzhanovskij, 1972: 435.

Japanese name: Dôgane-emma-mushi.

Description. Body length, PPL, male, 3.95 – 5.66 mm (4.72 ± 0.08, n=20), female, 4.09 – 6.33 mm (5.30 ± 0.12, n=20), PEL, male, 3.52 – 4.71 mm (4.20 ± 0.06, n=20), female, 3.81 – 5.09 mm (4.47 ± 0.08, n=20). Width, male, 3.14 – 4.19 mm (3.64 ± 0.05, n=20), female, 3.28 – 4.57 mm (3.94 ± 0.07, n=20). Biometric data are given in Table 36. Body broadly oval and strongly convex. Cuticle

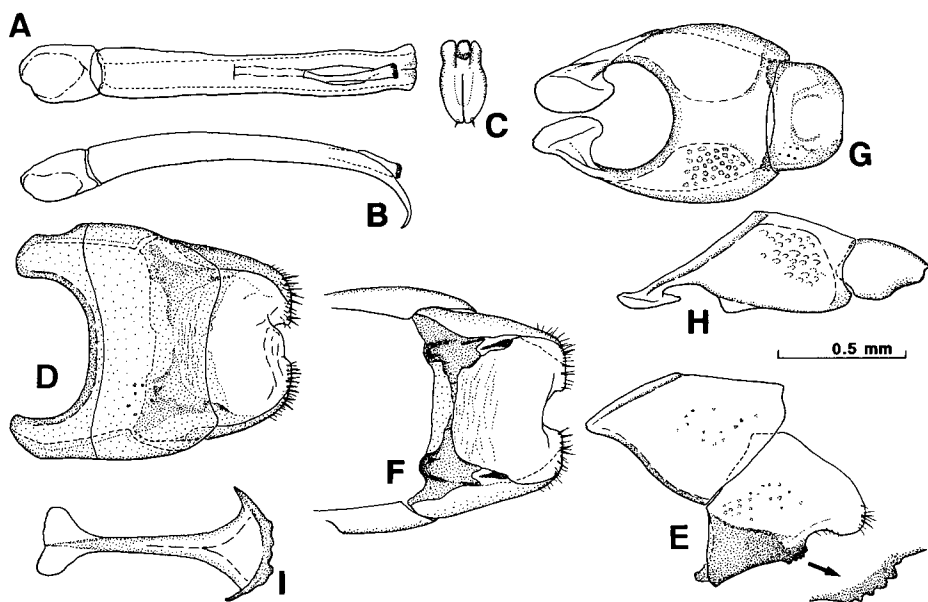


Fig. 139. *Saprinus planiusculus* Motschulsky. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Apex of aedeagus, caudal view. D: Male genitalia, 8th tergite and sternum, dorsal view. E: Ditto, lateral view. F: Apex of 8th sternum, ventral view. G: Male genitalia, 9th and 10th tergites, dorsal view. H: Ditto, lateral view. I: Ninth sternum (spicule), dorsal view.

very strongly shining with brassy lustre, black; tarsi and funicle of antennae dark rufopiceous.

Frontal stria of head weakly carinate and complete. Supraorbital stria well impressed and complete. Disk of front densely covered with moderate punctures, which become sparser on the basal 1/2; interspace among these punctures usually smooth, occasionally clothed with fine punctures. Epistoma medio-apically more densely punctate than the disk. Labrum deeply depressed medially.

Pronotal sides (Fig. 136) evenly arcuate and convergent forward on basal 5/6, thence strongly convergent apically. Apical angles obtusely angulate. Marginal stria carinate and complete. Disk smooth, but densely, coarsely and deeply punctate along the sides except on basal 1/4, sparsely clothed with fine punctures in a narrow band outside the coarsely punctate area; base with 2 or 3 irregular rows of large punctures except on lateral 7th and a narrow antescutellar area; elsewhere extremely finely, sparsely punctate; area behind eyes feebly depressed.

Epipleura of elytra sparsely with moderate punctures, which become denser on the apical 1/3. Marginal epipleural stria complete and finely impressed. Marginal elytral stria lightly carinate and complete, its apical end extending along the posterior margin of elytron to medio-apical angle of elytron and then bending basally and running for a short distance. External subhumeral stria confined basally. Internal subhumeral stria present on median 1/3, with coarse punctures, and sometimes its basal end united with the apical end of oblique humeral stria. Oblique humeral stria (Fig. 136) distinctly impressed on basal 1/3. First, 2nd and 4th dorsal striae present on about basal 1/2, and coarsely and sparsely crenate; 2nd usually a little longer than the 1st. Third dorsal stria

short, present on basal 5th, and coarsely crenate. Fifth dorsal stria wanting. Sutural stria shortly represented by a row of 4 – 5 coarse punctures medially. Surface of apical 1/2 or 1/3 of elytra covered with coarse and oval punctures, which are finer than those in the area along the pronotal sides, and usually separated by about 1.5 (1 – 2) times the diameter, but sometimes sparser; the punctate area usually expanding basally onto sutural area and also onto interval between 2nd and 4th dorsal striae; interval between 1st and 2nd dorsal striae usually with several longitudinal and short lines; surface of basal 1/2 smooth, sparsely clothed with microscopic punctures; extreme apex of elytra (around apical stria) sparsely and finely punctate; interspace among all discal punctures of elytra smooth, occasionally clothed with microscopic punctures.

Propygidium densely covered with coarse punctures, which are a little coarser than the elytral coarse punctures and become finer on basal 1/2; interspace among the punctures occasionally finely punctate and with lightly impressed, fine and irregularly alutaceous microsculptures. Pygidium densely covered with punctures, which are slightly coarser than those of the propygidium and progressively become finer on the apical 1/3 and nearly absent at the apex.

Anterior margin of median portion of prosternum straight. Ventral disk of keel even, sparsely clothed with microscopic punctures, which are coarser laterally. Anterior marginal stria of keel deeply impressed, carinate, and complete. Carinal stria complete, divergent anteriorly and posteriorly, and nearly straight on apical 1/3. Descending lateral stria strongly carinate, its apical end attaining to apical 1/3 of carinal stria.

Anterior margin of mesosternum broadly and feebly emarginate medially. Marginal stria complete, and strongly carinate. Disk sparsely clothed with microscopic punctures, which become coarser laterally. Meso-metasternal suture lightly impressed, and accompanied with a strongly crenate line. Intercoxal disk of metasternum feebly convex, sparsely clothed with microscopic punctures, which are coarser along lateral metasternal stria and in a transverse apical band. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and present usually on basal 1/2. Lateral metasternal disk densely covered with round, shallow, large and setiferous punctures, which become smaller on the apical 1/3, with fine punctures intermingled. Metepisternum more densely punctate than those of lateral disk of metasternum, the punctures becoming sparser on apical 1/2.

Intercoxal disk of 1st abdominal sternum with strongly carinate lateral stria on basal 3/4; sparsely and microscopically punctate on median area; lateral area along lateral stria sparsely and coarsely punctate, with fine punctures intermingled.

Protibia with 13 spines on outer margin, the apical 2 and basal 3 small.

Male genitalia as shown in Fig. 139.

Specimens examined. [Hokkaidô] 1 ex., Shibeche, Kushiro, 16/vi/1955, K. Ijima (IJ); 1 ex., Kamui-kotan, Asahikawa, 20/vii/1987, M. Ôhara; 1♂, Ombetsu, 25/vi/1985, M. Ôhara; 1 ex., Otaru, Shiribeshi, 1/vii/1943, T. Hasegawa; 3 exs., Ishikari-hama, 7/viii/1978, T. Fujisawa; 2 exs., Zenibako, 27/vi/1985, 19/vi/1985, M. Ôhara; 5 exs., Sapporo, 19, 27/vi/1985, 9/vii/1987, M. Ôhara; 1 ex., Maru-yama, Sapporo, 23/vi/1979, N. Nishikawa; 1 ex., Ditto, 2/vi/1951, T. Kumata (EIHU); 1 ex., Jôzankei, Sapporo, 8/vii/1907, S. Matsumura (EIHU); 1 ex., Misumai, Sapporo, 27/vi/1990, M. Ôhara; 18 exs., Ditto, 9, 10 & 18/vii/1991, K. Sayama; 13 exs., Nopporo, 12/vi/1986, M. Ôhara; 9 exs., Kamayausu, Sapporo, 20/vii/1987, M. Hinakura; 1♂ 1♀, Hakodate, 19/vi/1954, T. Nakane (*Saprinus cuspidatus*, Dahlgren det.) (NA); 1 ex., Hakodate, 17/vi/1954, T. Nakane (NA); 1 ex., Mt. Hakodate, 26/viii/1951, K. Honma (NA); 2 exs., Yagishiri Is., 21/vi/1985, Y. Kusui.

[Honshû] Iwate-ken: 1 ex., Yashikidai, 19/vii/1954, T. Kumata (EIHU). Yamagata-ken: 12

exs., Yonezawa, 16/v/1944, Y. Kurosawa (NSMT). Fukushima-ken: 1 ex., Wakamatsu, 29/vi/1949, T. Nakane (NA); 2 exs., Mt. Koma-ga-take, southern Aizu, 10/viii/1949, K. Nagayama (NSMT); 2 exs., Wakamatsu, 14/v/1947, Y. Kurosawa (NSMT); 1 ex., Fukushima-shi, 9/vii/1965, K. Tazoe. Tochigi-ken: 1 ex., Kawaraya, Utsunomiya, 23/vi/1981, K. Aida, collected from a dead crow (TPM); 6 exs., Tsuruta-numa, Utsunomiya-shi, 22-23/vii/1991, no collector's name (TPM). Chiba-ken: 2 exs., Cape Futtu, 2/vii/1961, M. Yamazaki (NA); 1 ex., Ōami, 19/vi/1984, M. Ōhara; 2 exs., Ichikawa, 27/iv/1958, M. Suwa. Tōkyō-to: 2 exs., Ogikubo, 16/vi/1963, 21/iv/1968, M. Ishida; 1 ex., Kumegawa, Higashi-mura-yama, 26/iv/1964, M. Ishida; 1 ex., Setagaya, 18/ix/1949, Ōhira (NA); 1 ex., Takamizu-yama, 2/vi/1935, T. Nakane (NA); 1 ♀, 1 ex., Hongō, Musashi, v/1947, T. Nakane (*Saprinus cuspidatus*, Dahlgren det.) (NA); 2 exs., Aoyama, 26/vii/1943, 25/v/1948, T. Nakane (NA); 1 ex., Komazawa, 23/v/2603 (= 1943), Watanabe (NSMT); 1 ex., Kinuta, 16/v/1965, Y. Kurosawa (NSMT); 1 ex., Ueno-kōen, 1/vii/1934, H. Uchida (NSMT); 1 ex., Hatagaya, 11/v/1924, no collector's name. Yamanashi-ken: 1 ex., Masutomi, 12/vi/2603 (= 1943), no collector's name (NSMT); 1 ex., Sagashiro Spa., 28-30/vii/1961, S. Nomura (NSMT). Niigata-ken: 1 ex., Niigata-shi, 26/vi/1933, K. Baba. Nagano-ken: 1 ex, Fukushima, Kiso, 11-12/vi/1940, T. Nakane (*Saprinus cuspidatus*, Dahlgren det.) (NA); 1 ex., Kami-Kōchi, Shinano, 21-28/viii/1947, S. Ōsawa (NA); 3 exs., Sunama, Nojiri, 21/viii/1943, T. Nakane (NA); 1 ex., Gaijin-mura, Nojiri, 19/viii/1941, T. Nakane (NA). Aichi-ken: 3 exs., Obata, Owari, 15/vi/1941, 30/v/1947, S. Ōsawa (NA); 1 ex., Miya, Mikawa, 1-2/ix/1947, S. Ōsawa (NA); 1 ex., Shiadeki-machi, Nagoya, 1/vi/1941, S. Ōsawa (NA). Gifu-ken: 3 exs., Hirayu, 24/vii/1946, M. Hayashi. Hyōgo-ken: 1 ex., Motoyama-mura, near Kōbe, 14/v/1938, K. Sakaguchi (NA); 1 ex., Kōbe, 22/vi/1930, no collector's name (BSM). Tottori-ken: 2 exs., Daisen, 27/v/1935, M. Hamano (NSMT).

[Kyūshū] Fukuoka-ken: 1 ex., Hakozaki, 24/vi/1946, F. Nakasuji (NA).

Distribution (Fig. 141). Japan (Hokkaidō, Honshū, Shikoku, Kyūshū); northern Palearctic Region; Europe; Siberia; China; Korea; Canary and Azores Is.; North Africa; Asia Minor; Viet-Nam (?)

Remarks. *Saprinus planiusculus* resembles *Saprinus niponicus*, with which it is sympatric to a great extent; however, it can be distinguished from the latter by the shortened 3rd dorsal elytral stria and the shape of the 8th sternum of the male genitalia.

This species occurs on dead animal bodies.

Marseul (1873: 221) recorded *Saprinus nitidulus* from "Japan; Shimabara (Kiu-Siu) et Hiogo (Nippon)". Although I have not examined Marseul's specimens, they may be *planiusculus* or *niponicus*.

Table 36. Biometric data of *Saprinus planiusculus* Motschulsky.

	Male	Female
APW	1.19-1.43 (1.32±0.01) 20	1.24-1.57 (1.42±0.02) 20
PPW	2.81-3.81 (3.36±0.05) 20	3.05-4.00 (3.61±0.06) 20
PL	1.33-1.86 (1.58±0.03) 20	1.38-1.86 (1.68±0.03) 20
EL	2.28-2.86 (2.57±0.03) 20	2.24-3.19 (2.70±0.06) 20
EW	3.14-4.19 (3.64±0.05) 20	3.28-4.57 (3.94±0.07) 20
ProW	2.05-3.05 (2.29±0.04) 20	2.00-3.05 (2.42±0.05) 20
ProL	0.48-0.71 (0.58±0.02) 20	0.43-0.62 (0.54±0.01) 20
PyL	1.29-1.81 (1.54±0.03) 20	1.52-2.14 (1.81±0.03) 20
PTL	1.14-1.52 (1.34±0.02) 20	1.14-1.67 (1.37±0.03) 20
MSTL	1.29-1.76 (1.46±0.02) 20	1.19-1.67 (1.42±0.03) 20
MITL	1.48-2.00 (1.68±0.03) 20	1.38-1.95 (1.68±0.04) 20

Saprinus (Saprinus) splendens (Paykull, 1811)
(Fig. 136, 140, 141)

Hister splendens Paykull, 1811: 53 [Capland].

Hister elegans Paykull, 1811; 57, synonymized by G. Müller, 1938: 165.

Hister speciosus: Dejean, 1821: 48 [nom. nud.].

Saprinus speciosus Erichson, 1834: 170; Marseul, 1873: 221 [Japan; Nangasaki et Hiogo], synonymized by Dahlgren, 1967: 214.

Hister cyaneus: Boisdual, 1835: 147, correctly identified by Mazur, 1976: 717.

Hister capicola Dejean, 1837: 141 [nom. nud.], synonymized by Gemminger and Harold, 1868: 791.

Saprinus viridicupreus Blanchard, 1853: 57, synonymized by Blackburn, 1903: 107.

Saprinus advena Marseul, 1855: 335, synonymized by Gemminger and Harold, 1868: 789.

Saprinus ovalis Marseul, 1855: 382, synonymized by Dahlgren, 1967: 214.

Saprinus elegans: Marseul, 1855: 383.

Saprinus ater MacLeay, 1864: 118, synonymized by Blackburn, 1903: 104.

Saprinus rasselas Marseul, 1855: 379, synonymized by Bickhardt, 1921: 117.

Saprinus splendens elegans: G. Müller, 1938: 165.

Japanese name: Ruri-emma-mushi.

Description. Body length, PPL, male, 5.05 – 6.85 mm (6.12 ± 0.13 , $n=20$), female, 6.14 – 7.66 mm (7.07 ± 0.10 , $n=20$), PEL, male, 4.28 – 5.43 mm (4.88 ± 0.07 , $n=20$), female, 4.86 – 5.90 mm (5.52 ± 0.07 , $n=20$). Width, male, 3.76 – 4.76 mm (4.33 ± 0.06 , $n=20$), female, 4.33 – 5.24 mm (4.80 ± 0.06 , $n=20$). Biometric data are given in Table 37. Body broadly oval and strongly convex. Cuticle very strongly shining with dark blue metallic lustre; elytra with light blue metallic lustre; funicle of antennae and tarsi dark rufopiceous; tibiae black.

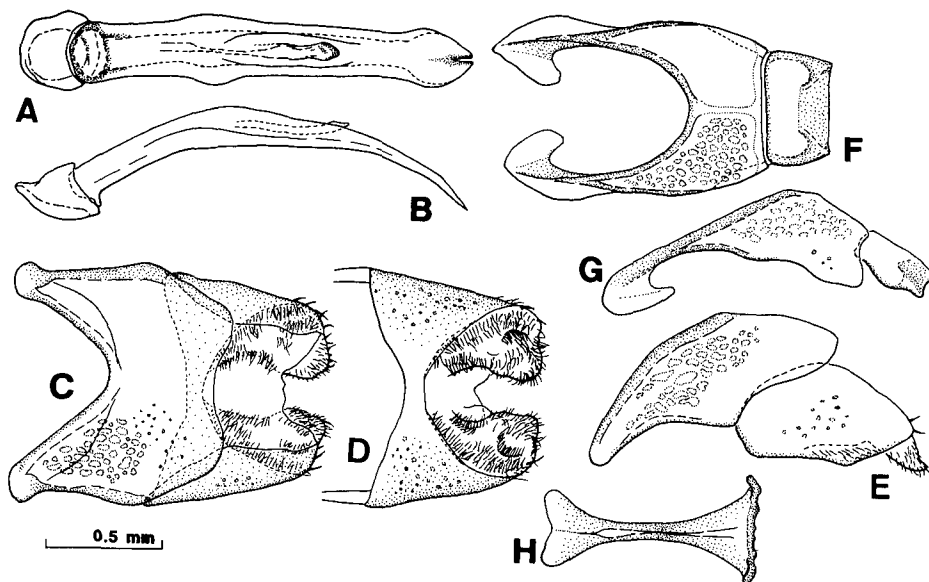


Fig. 140. *Saprinus splendens* (Paykull). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Apex of 8th sternum, ventral view. E: Eighth tergite and sternum, lateral view. F: Male genitalia, 9th and 10th tergites, dorsal view. G: Ditto, lateral view. H: Ninth sternum (spicule), dorsal view.

Frontal stria of head carinate, complete, its sides straight. Supraorbital stria complete and well impressed. Disk of front moderately punctate, the punctures being separated by 0.5 – 1 times the diameter on apical half, becoming sparser and finer on basal 1/2 and coarser laterally; sometimes with short lines medially, which are divergent apically, and with a deep and large puncture on basal 1/3 on mid line. Epistoma more sparsely punctate than the disk medio-apically. Labrum broadly and deeply depressed medially.

Pronotal sides (Fig. 136) evenly arcuate and convergent forward on basal 5/6, thence strongly convergent apically. Apical angles obtuse. Marginal stria lightly carinate and abbreviated on basal 1/6. Disk smooth, densely, largely and deeply punctate along the sides, the punctate area narrowest at middle, attaining to basal margin, and the punctures much coarser behind anterior corner; base with a row of coarse punctures, but the punctate area broadly interrupted on median 1/3 of pronotal posterior margin; elsewhere microscopically, sparsely punctate; area behind eyes strongly depressed.

Epipleura of elytra even; surface between epipleural and elytral marginal striae with 3 or 4 rows of moderate punctures, the rows being often abbreviated on basal 1/3; area inside elytral marginal stria sparsely clothed with microscopic punctures, which are finer on the apical 1/3. Marginal epipleural stria lightly but distinctly carinate and complete. Marginal elytral stria strongly carinate, complete, its apical end extending along the posterior margin of elytron and united with the apical end of sutural stria. External subhumeral stria (Fig. 136) confined to a basal area. Internal subhumeral stria absent. Oblique humeral stria well impressed and present on basal 1/2. First to 3rd dorsal striae densely crenate with coarse punctures, strongly impressed and present on about basal 1/2; 2nd a little longer than the 3rd; 1st a little longer than the 2nd. Fourth dorsal stria short, usually present on mediobasal 1/4. Fifth dorsal stria absent. Suture stria distinctly carinate, sparsely crenate and abbreviated on basal 1/6. Surface of elytra densely covered with large, round, and deep punctures, which are as coarse as those of the extreme base of the pronotum, except on flanks, mediobasal 1/2, and extreme apex (around apical stria); elsewhere sparsely and microscopically punctate; interval between 1st and 2nd dorsal striae with several longitudinal rugae.

Propygidium short; disk densely covered with punctures, which are a little coarser than the elytral coarse punctures and sparser and finer on the basal 1/2. Pygidium (Fig. 136) densely covered with large punctures, which are about 3 times as coarse as the elytral coarse punctures but finer on the apical 1/3; usually with a complete or nearly complete, narrow, median longitudinal line which is impunctate.

Anterior margin of median portion of prosternum nearly straight and shortly marginate on median 1/3. Ventral disk of keel descending anteriorly and even on basal 1/4; its disk finely covered with punctures, which are separated by 2 – 3 times their diameter; interspace among these punctures with fine and alutaceous microsculpture. Anterior marginal stria of keel strongly carinate and complete. Carinal stria weakly carinate and strongly divergent posteriorly. Descending lateral stria complete and strongly carinate, its apical end attaining to apical 1/6 of keel.

Anterior margin of mesosternum slightly emarginate medially, its marginal stria well carinate and complete. Disk sparsely clothed with fine punctures, which are a little coarser laterally. Meso-metasternal suture well impressed, complete, angulate at middle, and without a crenate line. Intercoxal disk of metasternum feebly convex, but strongly depressed along longitudinal sutural line in male, while feebly depressed in

Table 37. Biometric data of *Saprinus splendens* (Paykull).

	Male	Female
APW	1.24-1.62 (1.49± 0.02) 20	1.38-1.76 (1.60± 0.02) 20
PPW	3.47-4.83 (4.01± 0.06) 20	4.05-4.81 (4.46± 0.05) 20
PL	1.71-2.09 (1.91± 0.02) 20	1.81-2.33 (2.16± 0.03) 20
EL	2.38-3.24 (2.90± 0.05) 20	2.86-3.47 (3.19± 0.04) 20
EW	3.76-4.76 (4.33± 0.06) 20	4.33-5.24 (4.80± 0.06) 20
ProW	2.19-2.95 (2.67± 0.05) 20	2.62-3.24 (2.96± 0.04) 20
ProL	0.29-0.62 (0.49± 0.02) 20	0.38-0.62 (0.48± 0.01) 20
PyL	1.67-2.19 (1.93± 0.03) 20	2.00-2.62 (2.26± 0.03) 20
PTL	1.29-1.81 (1.54± 0.03) 20	1.43-1.81 (1.64± 0.03) 20
MSTL	1.33-1.81 (1.64± 0.03) 20	1.43-2.00 (1.71± 0.03) 20
MTTL	1.57-2.09 (1.87± 0.03) 20	1.76-2.19 (2.03± 0.02) 20

female; median area sparsely clothed with fine punctures, which are separated by 3 – 8 times their diameter; lateral area along the lateral stria sparsely covered with coarse, round and deep punctures, and with other fine ones intermingled; similarly punctate in an apical transverse band, the punctures becoming sparser and finer on median 1/3; interspace among punctures on lateral area and apical transverse band with finely impressed, alutaceous micro-sculpture. Lateral metasternal stria strongly carinate, extending obliquely and posteriorly, and present on basal 2/3. Lateral metasternal disk densely covered with large, round, deep punctures, and with fine ones intermingled; interspace among punctures with lightly impressed, irregular, and transverse alutaceous microsculpture. Metepisternum densely covered with large, deep, and longitudinal punctures, and with fine punctures intermingled; interspace among these punctures smooth and shining.

Intercoxal disk of 1st abdominal sternum sparsely clothed with fine punctures, which become coarser laterally; lateral stria well carinate and abbreviated on apical 1/6.

Protibia with 11 spinules on outer margin, the apical 3 and basal 2 small.

Male genitalia as shown in Fig. 140.

Description of larva: Hayashi (1986: pl. 11).

Specimens examined. [Honshû] Yamagata-ken: 2 exs., Sakata, 27/vii/1956, K. Shirahata (NA). Chiba-ken: 1 ex., Ôami, 22/vi/1984, M. Ôhara; 2 exs., Okitsu, 1913, F. Muir (BSM). Tôkyô-to: 1 ex., Inogashira, 2/viii/1952, no collector's name. Kanagawa-ken: 1 ex., Kamigo, Yokohama, vii/1977, K. Masumoto; 1 ex., Yokohama, vi/1923, J. F. Illingworth (BSM); 2 exs., Hiratsuka, vii/1958, S. Nomura (NSMT). Niigata-ken: 2 exs., Senami, northern Echigo, 29/vii/1984, viii/1984, K. Baba. Shizuoka-ken: 17 exs., Toi, Tagata, vi-ix/1987, S. Mochizuki; 1 ex., Gotemba, 17/viii/1933, K. Nakamura; 1 ex., Miho, 10/vi/1932, no collector's name (NSMT); 1 ex., Ditto, 20/x/1927, K. Satô (NSMT). Aichi-ken: 2 exs., Obata, Owari, 20, 30/v/1947, S. Ôsawa (NA); 1 ex., Nagoya, Owari, 1/viii/1947, S. Ôsawa (NA); 1 ex., Miya, Mikawa, 1-2/ix/1947, S. Ôsawa (NA). Hyôgo-ken: 2 exs., Uzaki, 20/vi/1935, S. Eda (NA); 1 ex., Kôbe, 23/vi/1930, no collector's name (BSM). Wakayama-ken: 1 ex., Kawayu, Hongû, southern Kii, 24/vii/1946, S. Ôsawa (NA); 7 exs., Kushimoto, 30/vi/1957, C. Morishima (NSMT). Ôsaka-fu: 1 ex., Minô, 2/viii/1947, F. Takahashi (NA); 1 ex., Senriyama, 28/v/1949, K. Sawada (NA). Okayama-ken: 1 ex., Kamba, 19/v/1940, T. Okutani (NSMT).

[Kyûshû] Fukuoka-ken: 1 ex., Tataru, 10/v/1945, Y. Kurosawa; 2 exs., Ditto (NSMT); 1 ex., Hakozaki, 15/v/1964, F. Nakasuiji (NA). Saga-ken: 1 ex., Chika, 30/ix/1952, H. Yamaguchi (NA). Kagoshima-ken: 1 ex., Kushikino, 28/v/1982, M. Maegata; 1 ex., Midori-ga-oka, Kagoshima-shi, 9/vi/1982, N. Mizoguchi; 1 ex., Sakura-jima, 20/vii/1951, F. Takahashi (NA).

[Nansei Isles] Yaku-shima Is.: 1 ex., 7-13/vii/1945, R. Matsuda (NA); 1 ex., Kosugi-dani, 7-

10/vi/1965, T. Kumata (EIHU); 1 ex., Shiratani, 21/vi/1975, Y. Kurosawa (NSMT). Amami-Ôshima Is.: 1 ex., Naze, 19/v/1960, T. Shibata (NSMT). Ishigaki Is.: 2 exs., Ishigaki, 26/iii/1984, Yoshida.

Distribution (Fig. 141). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Nansei Isles); tropical Africa; Arabia; Kashmir; Afghanistan, Oriental Region; Australia.

Remarks. *Saprinus splendens* can easily be recognized by the metallic blue body and the pygidium with an impunctate area on the mid line.

The biology of *S. splendens*, including the immature stages, was described by Nakasuji (1965) and Mochizuki (1980, 1985).

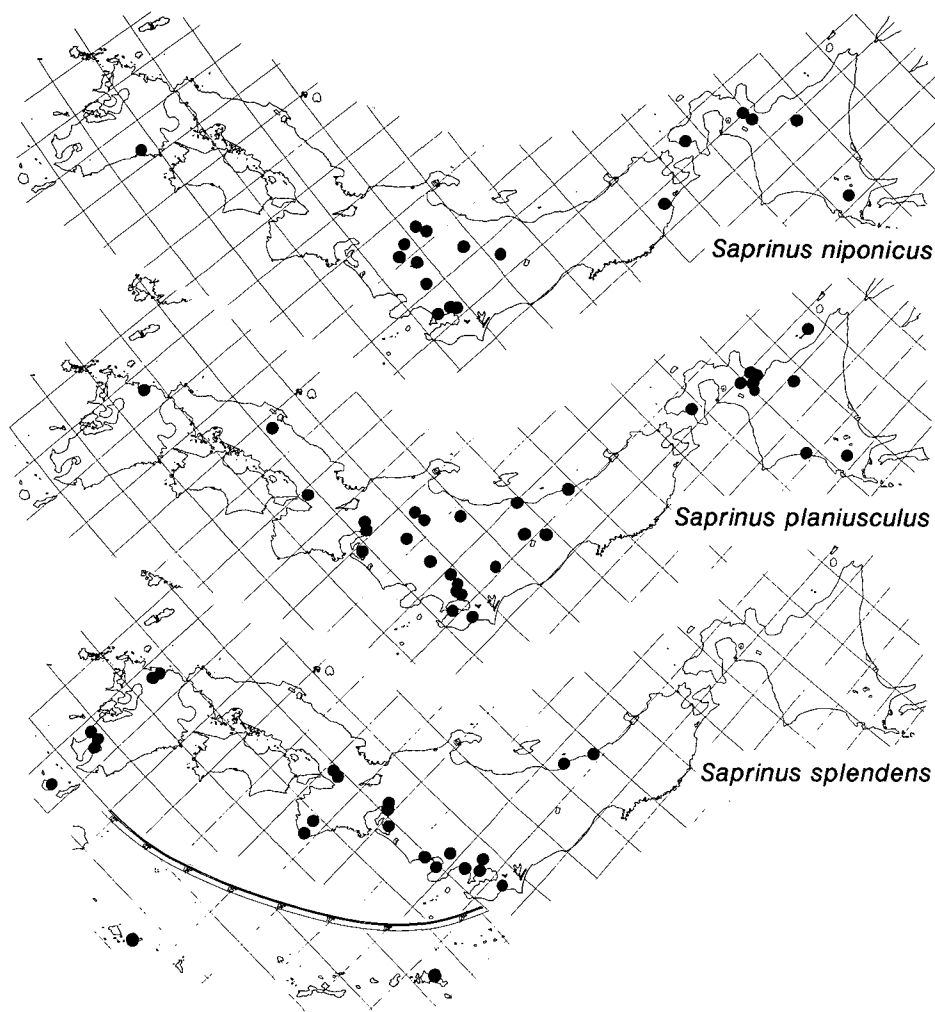


Fig. 141. Collection sites of *Saprinus* spp. in Japan.

GENUS HYPOCACCULUS BICKHARDT, 1916

Hypocacculus Bickhardt, 1916-17: 82, 95 [type species: *Saprinus metallescens* Erichson, 1834: 192, originally designated]; Reichardt, 1926b: 14; 1932: 28, 96; 1941: 156, 280; Peyerimhoff, 1936: 228; Kryzhanovskij and Reichardt, 1976: 201; Mazur, 1984: 83.

SUBGENUS NESSUS REICHARDT, 1932

Nessus Reichardt, 1932: 32 [type species: *Saprinus rubripes* Erichson, 1834: 193, originally designated]; 1941: 293; Kryzhanovskij and Reichardt, 1976: 207; Mazur, 1984: 86.

Hypocacculus (Nessus) asticus (Lewis, 1911) (Fig. 142, 143, 144)

Hypocaccus asticus Lewis, 1911: 89 [Japan: Enoshima].

Hypocacculus asticus: Bickhardt, 1916: 96.

Hypocacculus (Nessus) asticus: Mazur, 1984: 83.

Japanese name: Hime-hamabe-emma-mushi.

Description. Body length, PPL, 2.16 – 2.39 mm (2.26 ± 0.06 , $n=3$); PEL, 1.83 – 2.06 mm (1.95 ± 0.05 , $n=3$). Width, 1.60 – 1.80 mm (1.70 ± 0.05 , $n=3$). Body oval and strongly convex. Biometric data are given in Table 38. Cuticle very strongly shining and black or nearly so with a strong bronze or brassy lustre, but in an observed

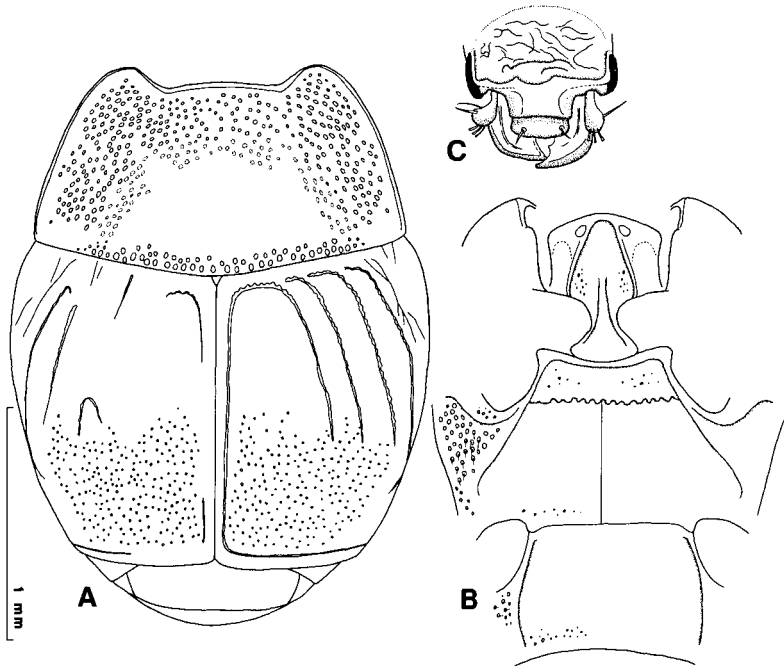


Fig. 142. *Hypocacculus (Nessus) asticus* Lewis. A: Pronotum and elytra, the right elytron with normal striae and the left with strongly reduced striae. B: Prosternum and meso- and metasterna. C: Head.

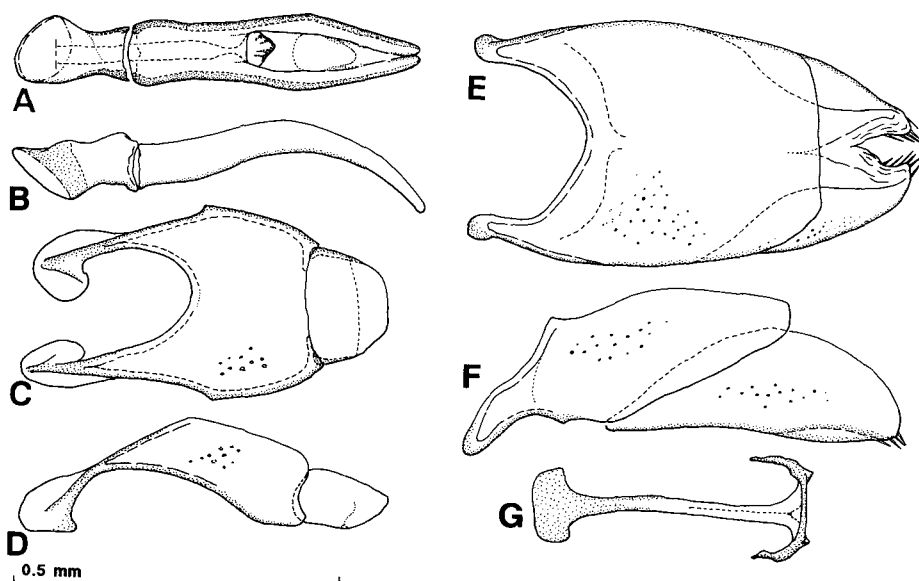


Fig. 143. *Hypocacclus (Nessus) asticus* Lewis. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 9th and 10th tergites, dorsal view. D: Ditto, lateral view. E: Male genitalia, 8th tergite and sternum, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

specimen dark rufopiceous, lacking the metallic lustre; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Frontal stria of head (Fig. 142C) complete and strongly carinate, straight anteriorly, and its sides parallel to each other and straight. Disk of front wholly with irregular and shallow rugae as shown in Fig. 142C. Epistoma scabrous.

Pronotal sides (Fig. 142A) feebly arcuate and not strongly convergent forward on basal 5/6, thence strongly arcuate and convergent apically. Apical angles round. Disk densely covered with coarse and round punctures except on mediobasal area, the punctures becoming deeper on longitudinal lateral area along the sides; base with 2 or 3 rows of coarse punctures, occasionally with fine punctures intermingled; sparsely clothed with microscopic punctures narrowly along the sides and on mediobasal areas.

Epipleura of elytra smooth, sparsely clothed with microscopic punctures. Marginal epipleural stria complete and distinctly carinate. Marginal elytral stria strongly carinate, complete, and extending along posterior margin of elytra, its apical end attaining to near lateral 1/3 of elytron. External subhumeral stria present on basal 1/4. Internal subhumeral stria present on median 1/3 and densely with moderate punctures. Oblique humeral stria distinctly impressed and present on basal 1/3. First and 2nd dorsal striae present on basal 2/3; the basal end of the 2nd extending inwards. Third dorsal stria a little shorter than the 2nd. Fourth dorsal stria present on basal 1/2, its basal end united with the end of sutural stria in an arch. First - 4th dorsal striae densely crenate with moderate punctures. Sutural stria complete and sparsely crenate with moderate punctures. Surface of apical 1/2 of elytra densely covered with coarse, round, and shallow punctures, which are as coarse as the pronotal coarse punctures and

separated by about 1.5 (1 – 2) times the diameter; basal 1/2, flanks and extreme apex of elytra impunctate.

Propygidium densely covered with coarse punctures, which are a little coarser than the elytral punctures and become finer anteriorly; interspace among punctures with lightly impressed, transverse alutaceous microsculpture on basal 1/2. Pygidium sparsely covered with coarse and transverse punctures, which are a little finer than those of the propygidium and separated by 2 – 3 times their diameter.

Anterior margin of median portion of prosternum (Fig. 142B) round. Preapical foveae distinct and large. Keel moderately compressed, its apex narrowly truncate. Descending lateral striae strongly carinate and convergent to apex. Carinal striae nearly parallel and slightly divergent basally on apical 1/2 and strongly so on basal 1/4. Lateral side of keel coarsely punctate laterally, and with alutaceous microsculpture.

Anterior margin of mesosternum (Fig. 142B) feebly emarginate, its marginal stria distinctly carinate and shortly interrupted medially. Disk very sparsely and moderately punctate. Meso-metasternal suture lightly impressed, and sparsely carinate with large punctures. Intercostal disk of metasternum sparsely clothed with microscopic punctures, which are occasionally coarser medio-apically. Lateral stria strongly carinate, extending obliquely and posteriorly, and reaching near hind coxae. Lateral disk sparsely covered with coarse, round, shallow and setiferous punctures, which are twice as coarse as the propygidial punctures, separated by their own diameter, and become sparser and finer apically. Metepisternum coarsely punctate on basal 2/3 and smooth on apical 1/3.

Intercostal disk of 1st abdominal sternum (Fig. 142B) completely striate laterally, and sparsely and microscopically punctate except for a transverse apical band which is moderately punctate.

Protibia with 7 spines on outer margin, the apical 4 large, and strongly dentate.

Male genitalia as shown in Fig. 143.

Specimens examined. [Honshû] Kanagawa-ken: 3♂♂ 1♀, 1 ex., Yui-ga-hama, Kamakura, 22/iv/1988, M. Tao; Wakayama-ken: 1 ex., Wakayama-shi, 10/ii/1957, M. Yoshida (NA).

[Kyûshû] Nagasaki-ken: 1 ex., Maehama, Kazusa-chô, 28/iii/1979, S. Imasaka.

Distribution (Fig. 144). Japan (Honshû, Shikoku, Kyûshû).

Remarks. *Hypocacculus asticus* can easily be recognized by the rugae on the front, the rather small size, the striation of the elytron and the punctation of the pronotum and elytra.

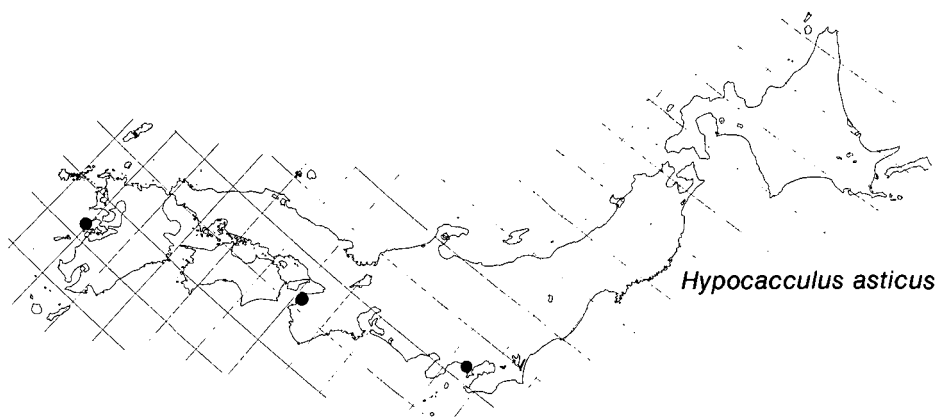


Fig. 144. Collection sites of *Hypocacculus (Nessus) asticus* Lewis in Japan.

Table 38. Biometric data of *Hypocacculus asticus* (Lewis) and *Hypocaccus lewisii* (Schmidt).

	<i>Hypocacculus asticus</i>	<i>Hypocaccus lewisii</i>
APW	0.69-0.72 (0.71±0.01) 3	0.75-1.01 (0.89±0.01) 20
PPW	1.47-1.64 (1.56±0.04) 3	1.57-2.13 (1.88±0.03) 20
PL	0.69-0.82 (0.74±0.03) 3	0.75-1.08 (0.93±0.02) 20
EL	1.18-1.24 (1.20±0.02) 3	1.24-1.80 (1.56±0.03) 20
EW	1.60-1.80 (1.70±0.05) 3	1.67-2.39 (2.07±0.04) 20
ProW	0.98-1.01 (0.99±0.01) 3	0.98-1.37 (1.22±0.02) 20
ProL	0.23-0.33 (0.28±0.02) 3	0.23-0.43 (0.32±0.01) 20
PYL	0.95-1.19 (1.06±0.06) 3	0.86-1.43 (1.24±0.03) 20
PTL	0.59-0.65 (0.63±0.02) 3	0.62-0.98 (0.74±0.02) 20
MSTL	0.56-0.62 (0.60±0.02) 3	0.65-0.88 (0.74±0.02) 20
MITL	0.65-0.75 (0.71±0.02) 3	0.72-0.95 (0.88±0.02) 20

According to Ôhara and Imasaka (1994), this species occurs on the root of *Clystegia soldanella* Roem. et Shult.

GENUS HYPOCACCUS THOMSON, 1867

Hypocaccus Thomson, 1867: 400 [type species: *Hister quadristriatus* Hoffmann, 1803: 85, nec Thunberg, 1794: 65, designated by Lewis, 1899: 3]; Schmidt, 1885b: 302; Ganglbauer, 1899: 382; Lewis, 1899: 3, fig. 6, 7; Reitter, 1909: 291; Bickhardt, 1916-17: 82-98; Reichardt, 1926b: 14; 1941: 156, 305; Peyerimhoff, 1936: 226; Arnett, 1962: 374, 380; Dahlgren, 1969: 64-66; Kryzhanovskij and Reichardt, 1976: 217; Mazur, 1984: 92.

Rhytidoprinus Houlbert et Monnot, 1923: 46, synonymized by Cooman, 1947: 428 [type species not designated].

Key to the Japanese species of the genus *Hypocaccus*

- 1(2) Pronotum smooth, at least finely punctate laterally. Meso-metasternal suture without crenate line. Subgenus *Baeckmaninolus* Reichardt, 1926
..... *H. varians* (Schmidt, 1890)
 - 2(1) Pronotum coarsely punctate. Meso-metasternal suture with strongly crenate line. Subgenus *Hypocaccus* Thomson, 1867
 - 3(4) Pygidium with impunctate area, which is divided by coarsely punctate mid line.
..... *H. axeli* Kryzhanovskij, 1976
 - 4(3) Pygidium evenly punctate wholly, or the punctures becoming finer apically, mid line without coarse punctures.
 - 5(6) Frontal disk of head densely covered with coarse rugae. Mesosternal marginal stria interrupted at middle. *H. subaenus* (Schmidt, 1890)
 - 6(5) Frontal disk of head with 1 or 2 transverse rows. Mesosternal marginal stria complete.
 - 7(10) Surface of elytra smooth on basal 1/2.
 - 8(9) Suturel elytral stria united with marginal elytral stria. *H. siniae* (Schmidt, 1890)
 - 9(8) Suturel elytral stria not united with marginal stria *H. akanensis* M. Ôhara, sp. nov.
 - 10(7) Surface of elytra coarsely punctate on basal 1/2. *H. lewisii* (Schmidt, 1890)
- Another species, *H. ainu*, has been described from Japan.

SUBGENUS HYPOCACCUS THOMSON, 1867

Hypocaccus (Hypocaccus) ainu Lewis, 1899

Hypocaccus ainu Lewis, 1899: 24 [Japan: Yezo, Ishikari river]; Reichardt, 1941: 308, 322.

Hypocaccus (? *Hypocaccus*) *ainu*: Kryzhanovskij and Reichardt, 1976: 229.

Japanese name: Ainu-hamabe-emma-mushi.

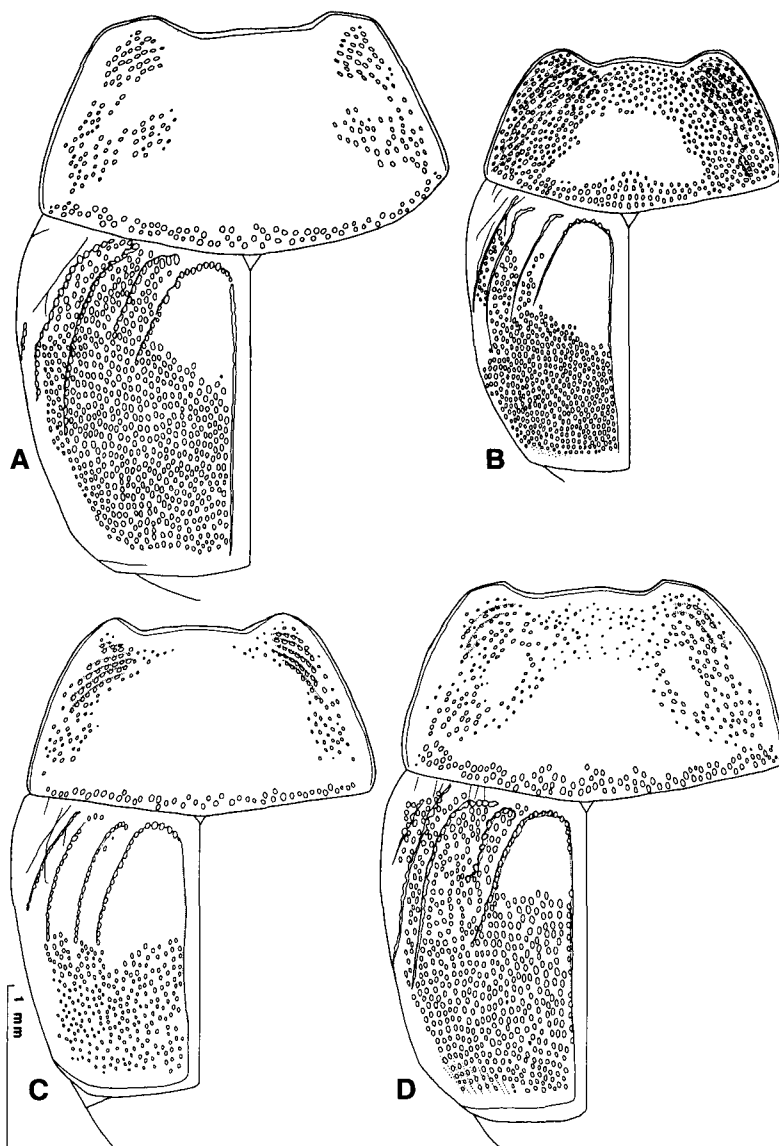


Fig. 145. *Hypocaccus* spp. Pronotum and left elytron. A: *H. axeli* Kryzhanovskij. B: *H. subaenus* (Schmidt). C: *H. sinae* (Marseul). D: *H. lewisii* (Schmidt).

Specimens examined. No material of this species has been available for my study.
Distribution. Japan (Hokkaidô).

Hypocaccus (Hypocaccus) axeli Kryzhanovskij, 1976
(Fig. 145, 146, 147, 148, 149)

Hypocaccus (Hypocaccus) axeli Kryzhanovskij in Kryzhanovskij and Reichardt, 1976: 223
[Primorskij Kray; Japan: Harima (= Hyôgo)].

Japanese name: Arame-hamabe-emma-mushi.

Description. Body length and biometric data as follows; PPL 3.68, PEL 3.36, APW 0.99, PW 2.57, PL 1.15, EL 2.11, EW 2.76, ProW 1.65, ProL 0.66, PyL 1.12, PTL 0.95, MSTL 0.99, MTTL 1.15. Biometric data are given in Table 38. Body broadly oval and moderately convex. Cuticle shining and black or bronze with brassy lustre; antennae dark piceous with club black; legs dark brown.

Frontal stria of head (Fig. 147A) nearly complete, sometimes interrupted behind bases of antennae. Anterior area of frontal disk with 1 or 2 rugae which are arcuate and sometimes irregularly interrupted. Supraorbital stria complete. Epistoma clearly striate on lateral sides, the stria feebly carinate.

Pronotal sides (Fig. 145A) feebly arcuate and convergent on basal 4/5, thence straight and strongly convergent apically. Apical angles obtuse. Marginal stria strongly carinate and complete. Disk densely and coarsely punctate except on a mediobasal triangular area, a small mediolateral area and a narrow band inside the marginal stria, the coarse punctures not rugose behind anterior corner; base with 2 or 3 irregular rows of coarse punctures, the rows broadest on antescutellar area; elsewhere smooth.

Epipleura of elytra even, and sparsely and finely punctate. Marginal epipleural stria clearly and strongly carinate, and densely with coarse punctures, its apical end extending inwards, reaching to lateral 1/3 of posterior margin of elytron. Internal subhumeral stria deeply impressed, strongly crenate and present on median 1/3. Oblique humeral stria present on basal 1/3. First dorsal stria deeply impressed, and nearly complete, its apical portion sinuate. Second dorsal stria present on basal 2/3. Third and 4th dorsal striae present on basal 1/2; basal end of 4th united with the basal end of sutural stria. First to 4th dorsal striae densely crenate with coarse punctures. Suture stria deeply impressed and complete. Surface of elytra densely and coarsely punctate except on flanks, extreme apex of elytra, a narrow band between sutural striae, and a medio-basal area inside 4th dorsal striae and occupying basal 1/3 of elytra; the punctures as coarse as those of the extreme base of the pronotum and separated by 0.5 times their diameter, usually appearing to be longitudinal rugae; elsewhere sparsely clothed with microscopic punctures.

Propygidium evenly covered with coarse punctures, which are a little coarser than the elytral ones and separated by about their own diameter; interspace among the punctures occasionally finely punctate. Pygidium (Fig. 148E) densely covered with coarse, round and deep punctures, which are a little coarser than the propygidial ones, along lateral margin and on mid line on apical 1/3 of pygidium, with a heart-shaped impunctate area on apical 1/3.

Anterior margin of median portion of prosternum (Fig. 146A) obtuse-acute.

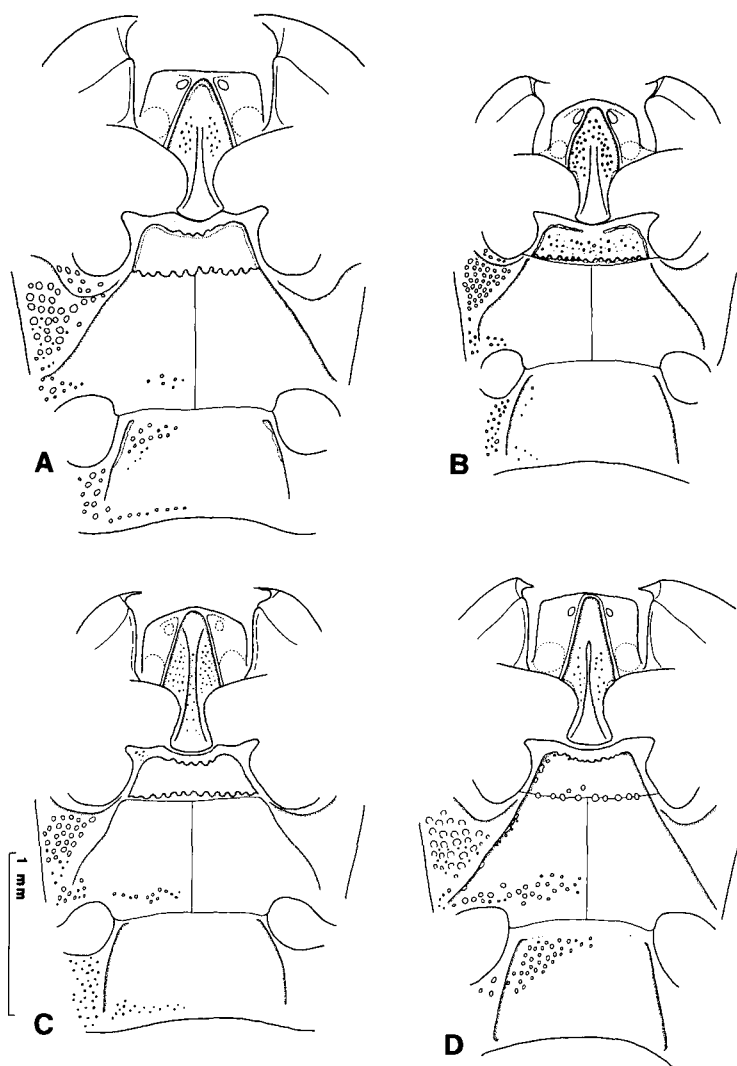


Fig. 146. *Hypocaccus* spp. Prosternum, mesosternum, metasternum and 1st abdominal sternum. A: *H. axeli* Kryzhanovskij. B: *H. subaenus* (Schmidt). C: *H. sinae* (Marseul). D: *H. lewisii* (Schmidt).

Preapical foveae present. Keel moderately compressed, its anterior apex narrowly truncate. Descending lateral stria strongly carinate and convergent to apex. Carinal stria present on basal 3/4 and distinctly impressed, its basal 1/2 gradually divergent basally. Lateral side coarsely punctate medially, and with alutaceous ground microsculptures.

Anterior margin of mesosternum feebly emarginate medially, its marginal stria heavily carinate and complete. Disk smooth. Meso-metasternal suture finely impressed, and with sparsely and coarsely crenate line. Intercoxal disk of metasternum smooth except in a transverse apical band, which is sparsely and finely punctate. Lateral metasternal stria well impressed, extending obliquely and posteriorly, reaching near

hind coxae. Lateral disk covered with large, shallow and round punctures, which are twice as coarse as pygidial punctures, separated by 0.5 times their diameter and become sparser apically; interspace among the punctures with fine punctures and alutaceous microsculpture. Metepisternum densely covered with coarse punctures, which are a little finer than those of the lateral disk of the metasternum; interspace among the punctures with moderate punctures.

Intercoxal disk of 1st abdominal sternum completely striate on each side, and moderately punctate along the lateral stria, behind anterior corner and in a transverse apical band.

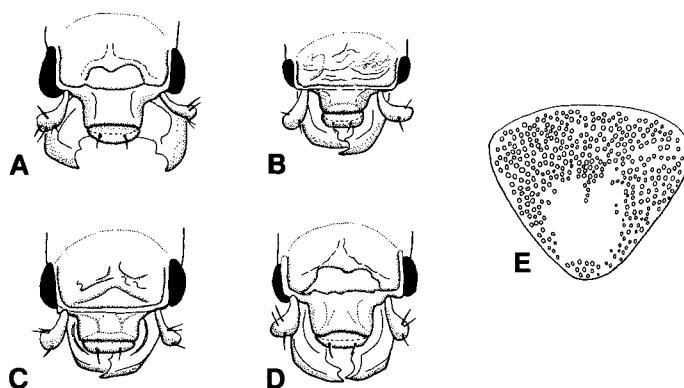


Fig. 147. *Hypocaccus* spp. Head (A – D) and pygidium (E). A, E: *H. axeli* Kryzhanovskij. B: *H. subaenus* (Schmidt). C: *H. sinae* (Marseul). D: *H. lewisii* (Schmidt).

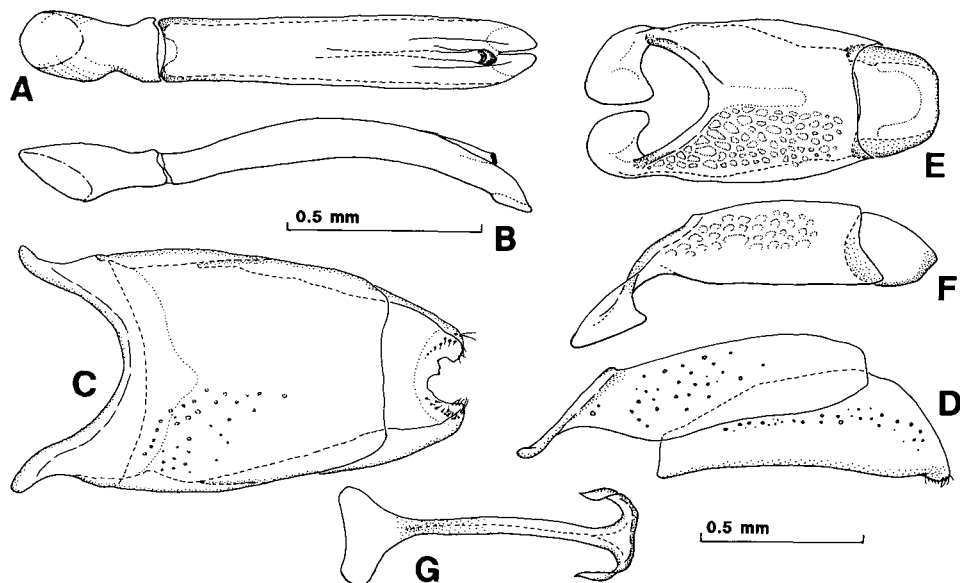


Fig. 148. *Hypocaccus* (*Hypocaccus*) *axeli* Kryzhanovskij. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

Protibia with 9 spinules on outer margin, the apical 2 small.

Male genitalia as shown in Fig. 148.

Specimens examined. [Hokkaidô] 1♂, Akan, Kushiro, 5/viii/1918, M. Suzuki, (ELKU).

[Honshû] Aomori-ken: 1♂, Akaishi River, Ajigasawa-machi, 7/vi/1987, H. Sawada. Nagano-ken: 1♂, Kami-Kôchi, Pv. Shinano, 27/iii/1918, M. Suzuki (ELKU). Gifu-ken: 1♂, Nagara, Pv. Minô, 19/vii/1919, M. Suzuki (ELKU).

Distribution (Fig. 152). Japan (Hokkaidô, Honshû). New to Hokkaidô.

Remarks. *Hypocaccus axeli* is easily recognized by the rather large size, the pygidium with an impunctate area medially, and the punctation of the pronotum and the elytra.

Little is known about the habitat of this species. It apparently lives on the pebbled beach of mountain rivers.

Hypocaccus (Hypocaccus) lewisii (Schmidt, 1890)

(Fig. 145, 146, 147, 149, 152)

Saprinus lewisii Schmidt, 1890: 53 [Japan: Hakodate].

Hypocaccus lewisii: Reichardt, 1926b: 273; 1941: 308, 320, fig. 167.

Hypocaccus (Hypocaccus) lewisii: Kryzhanovskij and Reichardt, 1976: 226.

Japanese name: Karakane-hamabe-emma-mushi.

Description. Body length, PPL, 2.26 – 3.17 mm (2.81 ± 0.05 , $n=20$), PEL, 2.13 – 2.94 mm (2.55 ± 0.04 , $n=20$). Width, 1.67 – 2.39 mm (2.07 ± 0.04 , $n=20$). Body oval and moderately convex. Biometric data are given in Table 38. Cuticle shining and black or nearly so with a strong bronzy, blue or brassy lustre; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Frontal stria of head (Fig. 147D) complete, well impressed and straight on each side. Supraorbital stria well impressed. Disk of front with a transverse ruga, and usually densely and strongly rugose in central area, and impunctate posteriorly. Epistoma scabrous.

Pronotal side (Fig. 145D) feebly arcuate and not strongly convergent on basal 5/6, thence strongly arcuate and convergent apically. Marginal stria complete and subcarinate. Disk coarsely and densely punctate, the punctures becoming more rugose laterally, and impunctate mediobasally; basal margin of pronotum with 2 or 3 rows of coarse punctures, and with fine ones intermingled, the coarse punctures becoming larger in antescutellar area and lateromedian 1/5 of pronotum, and finer laterally.

Epipleura of elytra smooth and even. Marginal epipleural stria complete, finely impressed. Marginal elytral stria (Fig. 145D) well impressed, carinate, and complete, its apical end continuing across elytral apex and united with the apical end of sutural stria at medio-apical angle of elytron. External subhumeral stria absent. Internal subhumeral stria shortly present on medial 1/3. Oblique humeral stria well impressed on basal 1/3. First dorsal stria unclearly present on basal 1/2, usually consisting of coarse punctures in a row, close to and parallel with the oblique humeral stria. Second, 3rd and 4th dorsal striae indistinguishable from elytral punctures, the 2nd sometimes represented by a ruga on basal 1/2; the basal end united with the 4th stria in an arch. Suture stria deeply impressed and complete, the apical end united with marginal elytral stria; the basal end united with the 4th stria, in an arch. Surface of elytra densely covered with coarse and somewhat longitudinal punctures except on mediobasal area,

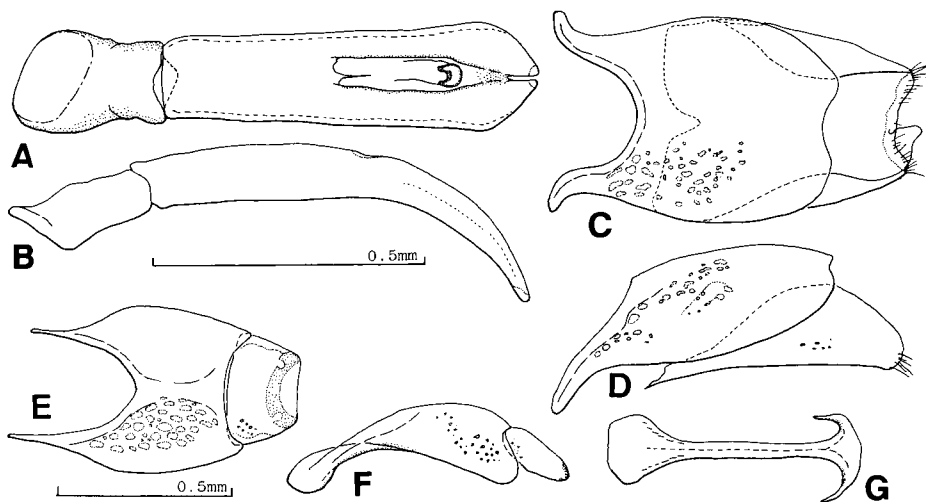


Fig. 149. *Hypocaccus (Hypocaccus) lewisii* (Schmidt). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

basal 1/6 of interstice between 2nd and 3rd dorsal striae and flanks of elytra; elsewhere sparsely covered with microscopic punctures.

Propygidium densely and moderately punctate, the punctures becoming finer and sparser basally. Pygidium densely and moderately punctate, the punctures finer near apex.

Anterior margin of median portion of prosternum (Fig. 146D) weakly obtuse-angulate. Preapical foveae distinctly present. Keel somewhat broad, moderately compressed, its anterior apex acute, rarely truncate. Descending lateral striae strongly carinate and convergent apically. Carinal striae present on basal 2/3, parallel to each other on median 1/3, and divergent basally, rarely their apical ends divergent, attaining to the descending lateral striae. Lateral sides of keel sparsely with moderate punctures.

Anterior margin of mesosternum feebly emarginate, its marginal stria carinate and complete. Disk smooth, sparsely with microscopic punctures. Meso-metasternal suture lightly impressed, accompanied by a coarsely crenated parallel line. Intercoxal disk of metasternum smooth except in a transverse apical band, which is sparsely and finely punctate. Lateral metasternal stria well impressed, extending obliquely and posteriorly, and reaching near hind coxae. Lateral disk evenly covered with coarse and setiferous punctures, impunctate along the lateral metasternal stria. Metepisternum densely and coarsely punctate.

Intercoxal disk of 1st abdominal sternum completely striate on each side, and sparsely covered with fine punctures along anterior margin.

Protibia with 10 spinules on outer margin, its apical-outer angles bearing 3 large spinules.

Male genitalia as shown in Fig. 149.

Specimens examined. [Hokkaidô] 1 ex., Obira, Rumoi, 28/vii/1985, M. Ôhara; 1 ex., Shari-

chô, 14/x/1987, H. Torikura; 2 ex., Zenibako, Otaru, 30/v/1977, 23/vi/1977, N. Nishikawa; 1 ex., Ishikari, 24/vi/1987, A. Iwasaki; 1 ex., Raisatsu, Ishikari, 24/vii-7/viii/1993, S. Hori (HOR); 7 exs., Shiranuka, 25/vi/1985, M. Ôhara; 12 exs., Toyokita-kaigan, Urahoro, 24/vi-7/vii/1993, S. Hori (HOR); 1 ex., Bansei-kaigan, Taiki, 7-8/vii/1993, S. Hori (HOR); 2 exs., Kojô-hama, Shiraoi, 30/vii/1953, M. Ôtake; 2 exs., Yokoma, Suttu, 11/vii/1979, T. Fujisawa (EIHU); 1 ex., Abashiri, 1/viii/1954, T. Nakane (NA); 1 ex., Hakodate, 17/vii/1954, T. Nakane (NA); 1 ex., Ditto, 15/vii/1952, K. Honma (EIHU); 1 ex., Nanae-hama, Hakodate, 17/viii/1977, Y. Kusui; 1 ex., Ditto, 5/iv/1978, N. Nishikawa; 1 ex., Nezaki-chô, Hakodate-shi, 15/v/1978, H. Sawada; 1 ex., Ditto, 19/vii/1952, K. Honma (EIHU). Okushiri Is.: 3 exs., Aonae, 28/vi/1986, Y. Kusui.

[Honshû] Aomori-ken: 1 ex., Nakanosawa, Mutsu, 8/vi/1989, H. Saito. Fukushima-ken: 2 exs., Fujima-kaigan, Iwaki, 25/vi/1988, K. Tazoe.

[Kyûshû] Fukuoka-ken: 1 ex., Aino-shima, 22/v/1983, S. Nakao.

[?] 1 ex., Imahama, 23/v/1948, no collector's name.

Distribution (Fig. 152). Japan (Hokkaidô, Honshû, Kyûshû). New to Kyûshû.

Remarks. *Hypocaccus lewisii* resembles *H. axeli*, but differs by the rather dense punctation on the pronotum and the pygidium without an impunctate area.

Hypocaccus lewisii occurs mainly on sandy beaches. It is occasionally found also on the sandy beach of mountain rivers (Kurosawa, 1988).

Hypocaccus (Hypocaccus) sinae (Marseul, 1862)

(Fig. 145, 146, 147, 150, 152)

Saprinus sinae Marseul, 1862: 496, fig. 52 [China: Shang-Hai]; 1873: 221 [Japon, Hiogo]; Blackburne, 1903: 106; Jakobson, 1911: 651.

Hypocaccus sinae: Desbordes, 1919: 415; Reichardt, 1941: 307, 312, fig. 158.

Hypocaccus (Hypocaccus) sinae: Kryzhanovskij and Reichardt, 1976: 226.

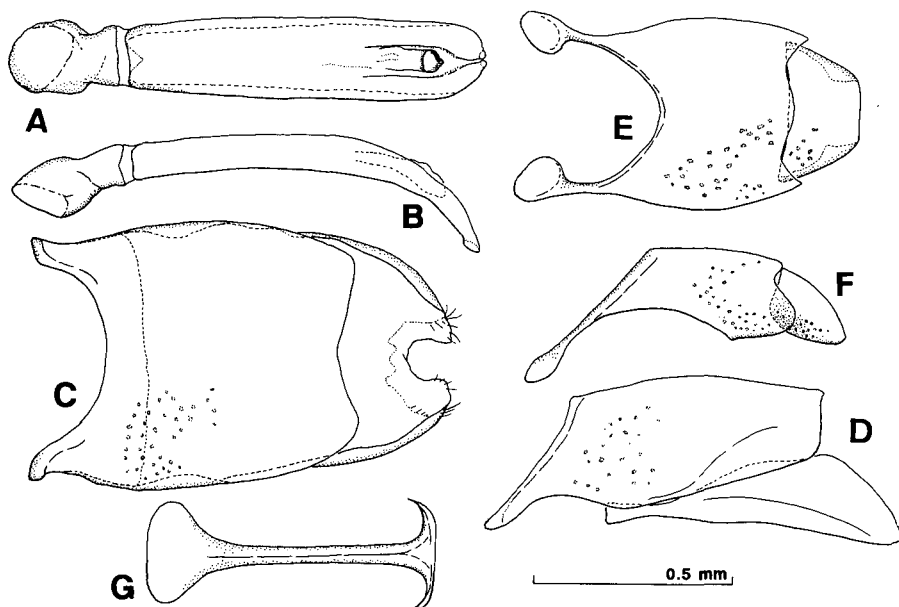


Fig. 150. *Hypocaccus (Hypocaccus) sinae* (Marseul). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

Japanese name: Nise-hamabe-emma-mushi.

Description. Body length, PPL, 2.39 – 3.34 mm (2.90 ± 0.06 , $n=20$), PEL, 2.22 – 2.94 mm (2.58 ± 0.05 , $n=20$). Width, 1.86 – 2.45 mm (2.15 ± 0.03 , $n=20$). Biometric data are given in Table 39. Body oval and moderately convex. Cuticle very strongly shining and black or nearly so with strong bronzy or brassy lustre; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Frontal stria of head (Fig. 147C) carinate, complete and straight on each side. Supraorbital stria well impressed. Disk of front impunctate, with 2 or 3 transverse rugae, which are sometimes interrupted. Epistoma scabrous.

Pronotal sides (Fig. 145C) rather feebly arcuate and not strongly convergent on basal 4/5, thence strongly arcuate and convergent apically. Apical angles somewhat round. Marginal stria complete and carinate. Disk smooth, its sides strongly, densely and moderately punctate anteriorly, the punctate area sometimes becoming broader basally and the punctures coarser and more rugose in the region of the anterior angles. Basal margin of pronotum with 1 or 2 rows of large punctures, which, however, become finer laterally.

Epipleura of elytra impunctate and even. Marginal epipleural stria complete. Marginal elytral stria deeply impressed and complete, its apical end extending along the posterior margin of elytron and united with the apical end of sutural stria at medio-apical angle of elytron. External subhumeral stria absent. Internal subhumeral stria shortly present on medial 1/3. Oblique humeral stria well impressed on basal 1/3 – 1/2, close to and parallel with the 1st dorsal stria. First dorsal stria deeply impressed, crenate and present on basal 2/3. Second, 3rd and 4th dorsal striae well impressed and coarsely punctate; these striae a little longer than the 1st. Sutural stria represented by a fine, crenulate, complete line, the apical end united with marginal elytral stria and the basal end united with the 4th in an arch. Surface of elytra smooth, impunctate on basal 1/2, coarsely and densely punctate on apical 1/2, the punctures being separated by 0.5 – 1 times the diameter; extreme apex of elytra (around apical stria) and flanks impunctate.

Propygidium densely and moderately punctate, the punctures being separated by slightly more than their own diameter. Pygidium sparsely and moderately punctate, the punctures becoming denser towards basal angles, and finer and sparser apically; apex of pygidium impunctate.

Anterior margin of median portion of prosternum (Fig. 146C) round. Preapical foveae distinctly present. Keel moderately compressed, its anterior apex narrowly truncate. Descending lateral striae carinate and convergent to apex. Carinal striae usually present on basal 3/4, and usually parallel apically and divergent basally, sometimes their apical ends united with each other at middle of keel. Lateral side of keel sparsely (sometimes densely) covered with coarse punctures on apical 1/2, with fine punctures intermingled.

Anterior margin of mesosternum feebly emarginate, its marginal stria carinate and complete. Disk smooth, sparsely clothed with microscopic punctures. Meso-metasternal suture finely impressed, accompanied with a coarsely crenated parallel line. Intercoxal disk of metasternum smooth except in a transverse apical band, which is sparsely and coarsely punctate. Lateral metasternal stria well impressed, extending obliquely and posteriorly, reaching near hind coxa. Lateral disk sparsely covered with large punctures, with fine ones intermingled. Disk of metepisternum densely covered

Table 39. Biometric data of *Hypocaccus sinae* (Marseul) and *H. subaenus* (Schmidt).

	<i>H. sinae</i>	<i>H. subaenus</i>
APW	0.75-0.98 (0.86±0.01) 20	0.62-0.78 (0.71±0.01) 20
PPW	1.57-2.22 (1.95±0.04) 20	1.50-1.96 (1.69±0.02) 20
PL	0.85-1.14 (1.04±0.02) 20	0.75-0.95 (0.85±0.01) 20
EL	1.31-1.83 (1.54±0.03) 20	1.28-1.70 (1.42±0.02) 20
EW	1.86-2.45 (2.15±0.03) 20	1.70-2.22 (1.92±0.03) 20
ProW	1.14-1.57 (1.33±0.02) 20	0.92-1.41 (1.13±0.03) 20
ProL	0.33-0.46 (0.39±0.01) 20	0.26-0.39 (0.31±0.01) 20
PyL	1.14-1.62 (1.30±0.03) 20	1.00-1.33 (1.14±0.02) 20
PTL	0.65-0.88 (0.76±0.01) 20	0.59-0.75 (0.66±0.01) 20
MSTL	0.62-0.92 (0.74±0.02) 20	0.56-0.75 (0.67±0.01) 20
MITL	0.69-0.98 (0.82±0.02) 20	0.65-0.88 (0.78±0.01) 20

with moderate punctures.

Intercoxal disk of 1st abdominal sternum completely striate on each side, and moderately punctate along the apical and basal margins, the punctures becoming denser at anterior corners.

Protibia with 6 large spinules on outer margin.

Male genitalia as shown in Fig. 150.

Specimens examined. [Hokkaidô] 1 ex., Sakanoshita, Wakkanai, 10/viii/1974, Y. Kusui; 2 exs., Teshio-gawa, Teshio, 9-22/vii/1993, S. Hori (HOR); 6 exs., Kitahama, Abashiri, 10/vii/1958, T. Nakane (NA); 2 exs., Tôen-kaigan, Taiki, 23/vi-7/vii/1993, S. Hori (HOR); 7 exs., Zenibako, 24/vi/1954, T. Kumata (EIHU); 1 ex., Ditto, 21/vi/1985, M. Ôhara; 1 ex., Momigi-yama, Ishikari, 1/vi/1974, S. Kudô. Okushiri Is.: 2♂♂, 1 ex., Aonae, 28/vi/1986, Y. Kusui.

[Honshû] Yamagata-ken: 1 ex., Miyaumi, Yamagata, 28/v/1953, K. Shirahara (NA). Ibaraki-ken: 2 exs., Tone River, Kawachi vill., 10/x/1985, M. Kiuchi. Chiba-ken: 2 exs., Iwai, Bôsô-hantô, 23/viii/1966, Y. Kusui; 2 exs., Okitsu, v/1913, F. Muir (BSM). Niigata-ken: 12 exs., Niigata-shi, 5/v/1933, K. Baba (NA). Ishikawa-ken: 4 exs., Uchida-sakyû, 31/viii/1968, H. Ebihara. Ôsaka-fu: 3 exs., Yodo River, 31/x/1954, T. Shibata (NA). Hyôgo-ken: 2 exs., Hiraiso, 14/viii/1954, T. Shibata (NA). Wakayama-ken: 1 ex., Minabe, 17/iii/1942, K. Sakaguchi (NA).

[Kyûshû] Fukuoka-ken: 1 ex., Hakozaiki, 1/ix/1964, F. Nakasuji (NA). Kagoshima-ken: 1 ex., Fukiage, 29/vii/1984, M. Ôhara; 2 exs., Uchinoura, Hirosegawa-kaigan, 5/v/1991, K. Haga.

Distribution (Fig. 152). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû).

Remarks. *Hypocaccus sinae* superficially resembles *H. (Baeckmanniolus) varians*, but can be distinguished from the latter by the characteristics given in the key.

This species occurs on sandy beaches. It is occasionally found also on the sandy beach of mountain rivers (Kurosawa, 1988).

Hypocaccus (Hypocaccus) subaenus (Schmidt, 1890)
(Fig. 145, 146, 147, 151, 152)

Saprinus subaenus Schmidt, 1890: 53 [Japan: Nikko].

Hypocaccus subaenus: Schleicher, 1930: 137; Reichardt, 1941: 308, 321.

Hypocaccus (? *Hypocaccus*) *subaenus*: Kryzhanovskij and Reichardt, 1976: 229.

Japanese name: Yama-hamabe-emma-mushi.

Description. Body length, PPL, 2.22 – 2.91 mm (2.48 ± 0.04, n=20), PEL,

2.03 – 2.62 mm (2.27 ± 0.03 , $n=20$). Width, 1.70 – 2.22 mm (1.92 ± 0.03 , $n=20$). Biometric data are given in Table 39. Body oval and moderately convex. Cuticle shining and black or nearly so, with bronzy, blue or brassy lustre; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Frontal stria of head (Fig. 147B) complete, carinate and straight on each side. Supraorbital stria complete. Disk of front scabrous on apical 2/3 and sometimes wholly. Epistoma scabrous.

Pronotal sides (Fig. 145B) feebly arcuate and convergent on basal 4/5, then strongly arcuate and convergent apically. Apical angles round. Marginal stria carinate and complete. Disk coarsely and densely punctate except mediobasally, the punctures becoming more rugose on lateral region; base with 2 or 3 transverse rows of coarse punctures with fine ones intermingled, the rows broadest at middle and becoming progressively narrower laterally.

Epipleura of elytra sparsely clothed with fine punctures. Marginal epipleural stria complete and feebly carinate. Marginal elytral stria complete and well carinate, its apical end extending near to lateral 1/6 of elytron. External subhumeral stria absent. Internal subhumeral stria shortly present on median 1/3. Oblique humeral stria well impressed on basal 1/3. First dorsal stria deeply impressed and crenate on basal 4/5. Second dorsal stria present on basal 3/5. Third dorsal stria a little longer than the 2nd. Fourth dorsal stria present on basal 1/2. Sutural stria represented by a fine complete line; the basal end united with the 4th stria in an arch. Surface of elytra smooth on basal 1/2, and densely covered with coarse punctures on apical 1/2 and sometimes also on basal

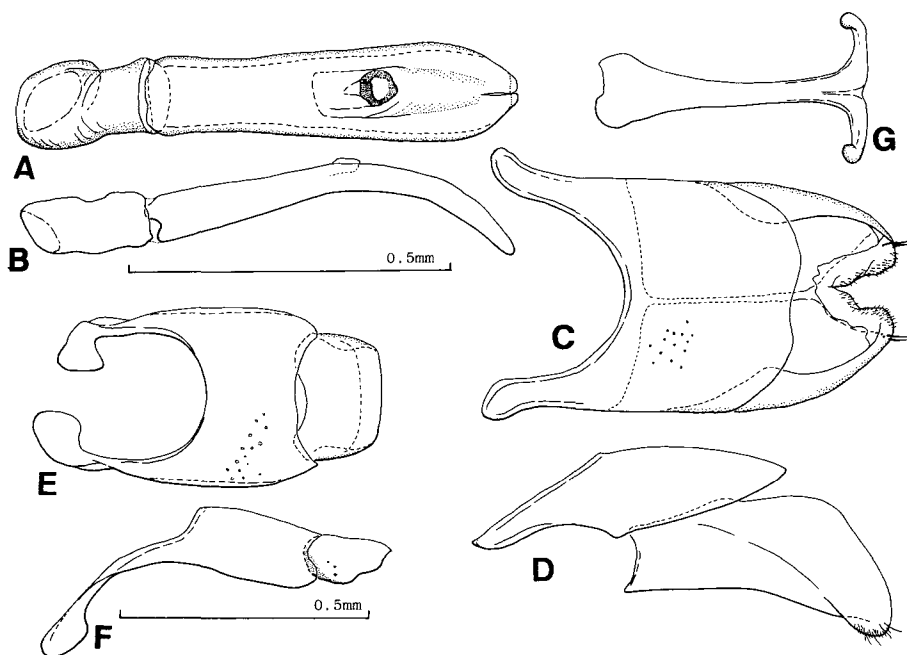


Fig. 151. *Hypocaccus (Hypocaccus) subaenus* (Schmidt). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

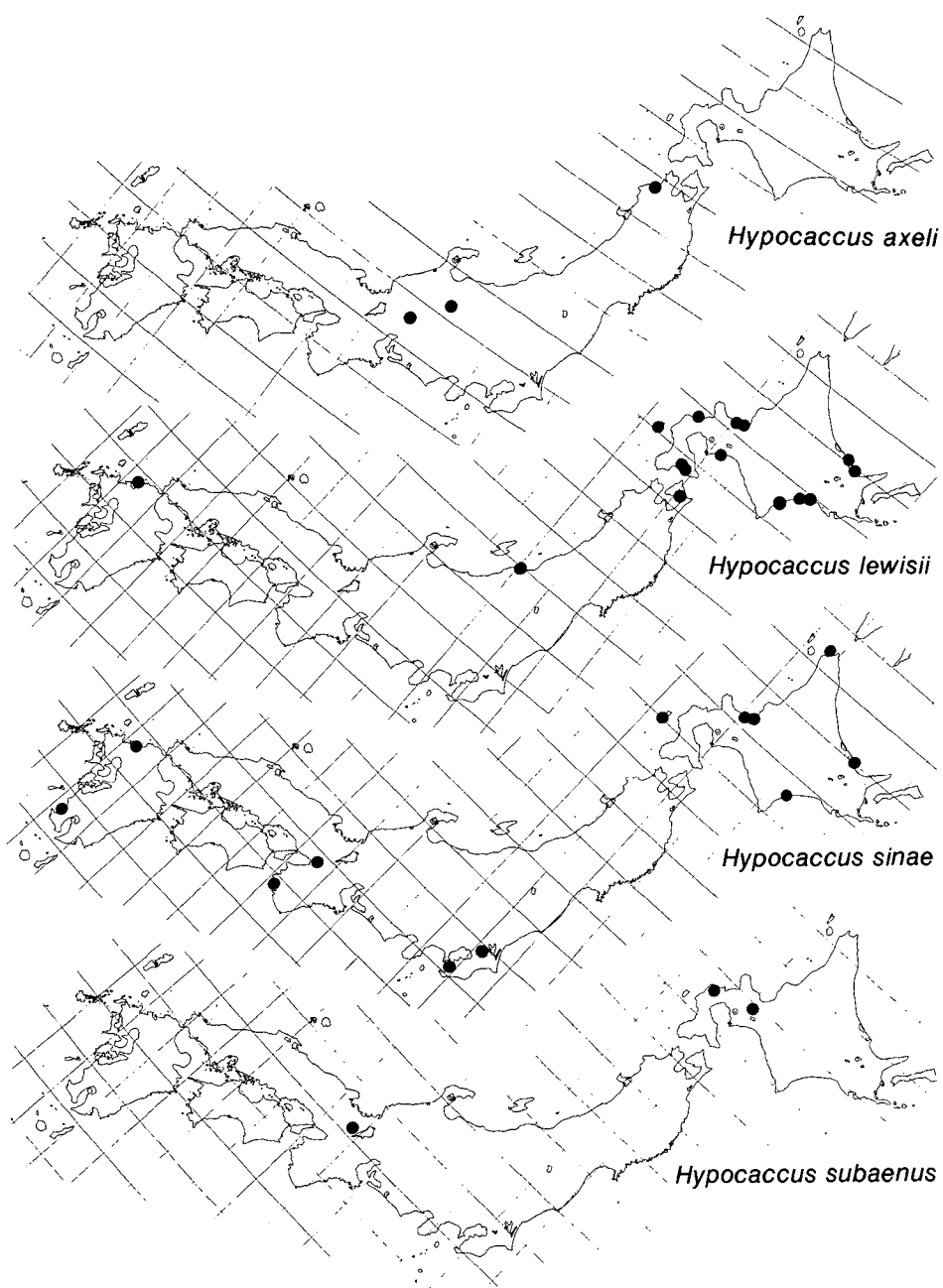


Fig. 152. Collection sites of *Hypocaccus* spp. in Japan.

area between 4th dorsal and marginal elytral striae, the punctures often rugose; extreme apex of elytra (around apical stria) and flanks impunctate, but sometimes flanks coarsely punctate.

Propygidium densely covered with coarse punctures, which become finer and

sparser towards base. Pygidium convex, and densely and moderately punctate, the punctures sparser apically and medially.

Anterior margin of median portion of prosternum (Fig. 146B) obtusely angulate or round. Preapical foveae distinctly present. Keel somewhat broad, and moderately compressed medially, the apex round. Descending lateral striae complete, carinate, and convergent at apex. Carinal striae present on basal 2/3, convergent apically and sometimes united with each other, rarely completely present, its apical end attaining to the apex of keel. Lateral side of keel sparsely with moderate punctures, with fine punctures intermingled.

Anterior margin of mesosternum feebly emarginate medially, its marginal stria well impressed on each side behind angle, usually interrupted in median 1/3, rarely complete. Disk transverse (19 : 5), evenly clothed with fine or moderate punctures. Meso-metasternal suture finely impressed, accompanied with a coarsely crenated parallel line. Intercoxal disk of metasternum sparsely clothed with fine punctures, and with a transverse apical band of sparse and moderate punctures. Lateral metasternal stria well impressed, carinate, extending obliquely and posteriorly, and reaching near hind coxa. Lateral disk densely and largely punctate, the punctures becoming sparser apically. Metepisternum densely covered with large punctures.

Intercoxal disk of 1st abdominal sternum completely and crenately striate on each side, and moderately punctate along posterior margin and inside the lateral striae.

Protibia with 8 spinules on outer margin.

Male genitalia as shown in Fig. 151.

Specimens examined. [Hokkaidô] 8 exs., Mt. Ôbira-yama, 29/v, 6-8/viii/1988, M. Ôhara, from dung of bear; 56 exs., Toyotaki, Jôzankei, 4, 6/vi, 14/vii/1986, 1/v, 3, 18/vi/1987, M. Ôhara.

[Honshû] Kyôto-fu: 1 ex., Kurama, 4/vi/1933, T. Kimura (NA).

Distribution (Fig. 152). Japan (Hokkaidô, Honshû).

Remarks. *Hypocaccus subaenus* can easily be distinguished by the front of the head with coarse rugae, the dense punctation of the pronotum, the mesosternum with coarse punctures and the interrupted mesosternal marginal stria.

Hypocaccus subaenus usually occurs on the sandy beach of mountain rivers. Some specimens were collected under dung of bear, *Ursus arctos* Linnaeus, on the beach of a river.

Hypocaccus (Hypocaccus) akanensis M. Ôhara, sp. nov.
(Fig. 153, 154, 155)

Japanese name: Akan-hamabe-emma-mushi.

Description. Body length, PPL, 2.13, PEL, 1.90. Width, 1.52. Biometric data as follows: APW 0.67, PPW 1.43, PL 0.76, EW 1.52, ProW 0.88, ProL 0.23, PTL 0.53, MSTL 0.55, MTTL 0.61. Body oval, convex, not shining and black; legs and antennae dark reddish brown.

Frontal stria of head (Fig. 153B) rudimentary behind apical angle (but it seems that the state of the only specimen available is not complete, with dermal structures defaced to some extent). Disk of front with rudimentary transverse rugae.

Pronotal sides (Fig. 153A, 154) convergent forward on basal 1/6, thence strongly arcuate and convergent apically. Apical angles round. Marginal stria carinate

and complete laterally, the apical portion broadly interrupted behind head. Disk coarsely and densely punctate, the punctures becoming more rugose in lateral region and absent mediobasally; base with 2 or 3 transverse rows of large and oblong punctures, the rows being broadest at middle and becoming narrower laterally.

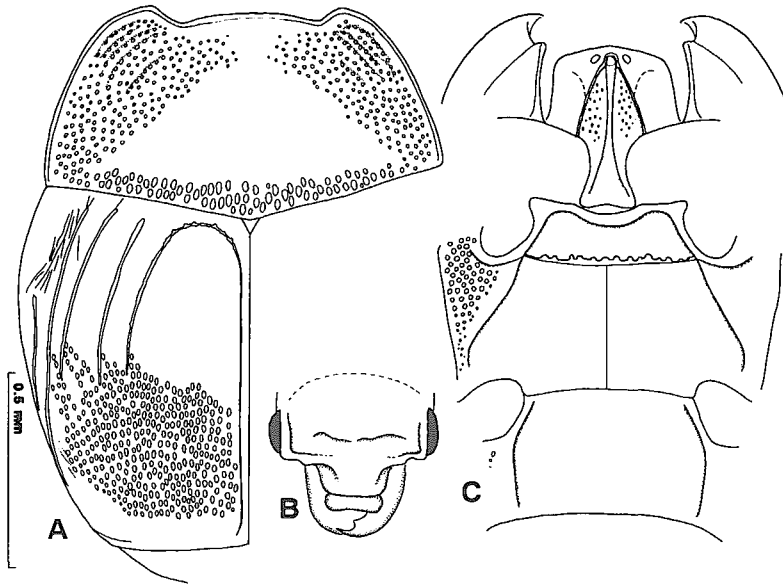


Fig.153. *Hypocaccus (Hypocaccus) akanensis* M. Ôhara, sp. nov. A: Pronotum and left elytron. B: Head, frontal view. C: Prosternum, mesosternum, metasternum and 1st abdominal sternum.

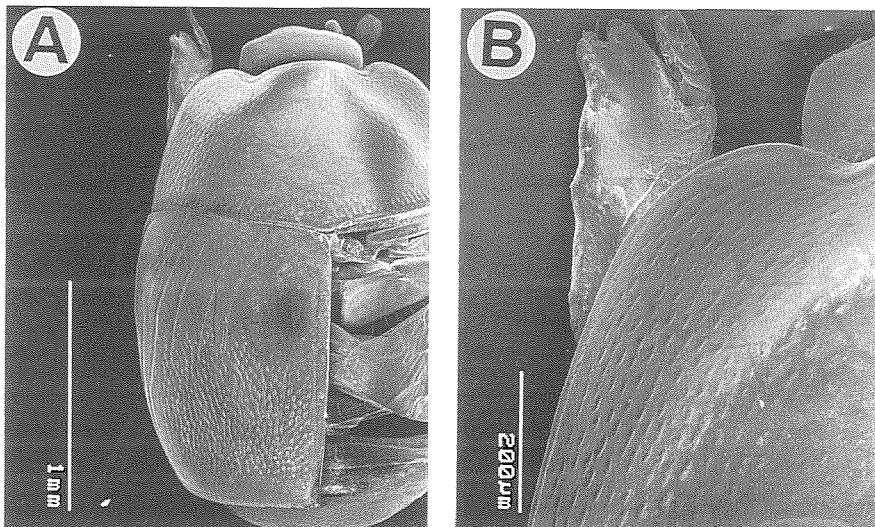


Fig. 154. *Hypocaccus (Hypocaccus) akanensis* M. Ôhara, sp. nov. A: Holotype, dorsal view. B: Left antero-lateral area of pronotum, dorsal view.

Marginal epipleural stria complete and clearly impressed. Marginal elytral stria complete, broadly impressed in basal 1/3, the apical end extending inwards, reaching to near lateral 1/4 of posterior margin of elytron. External subhumeral stria absent. Internal subhumeral stria impressed on median 1/3. Oblique humeral stria present on basal 1/3, the area around the stria with several short rugae. First dorsal elytral stria completely present, but shortly reduced on apical 1/8. Second to 4th dorsal striae well impressed on basal 1/2, the basal end of 4th extending inwards and united with the base of sutural stria. Sutural stria completely impressed. Surface of elytra smooth on basal 1/2, and densely covered with coarse and deep punctures, which are often united to form longitudinal rugae; extreme apex of elytron and flank sparsely and finely punctate.

Propygidium densely covered with coarse and round punctures, which become finer and sparser towards the base, but mostly are separated by their own diameter. Pygidium densely covered with coarse punctures, which are a little smaller than those of the propygidium and separated by 0.3 – 0.5 times their diameter; on the apex the punctures becoming finer and sparser.

Anterior margin of median portion of prosternum (Fig. 153C) weakly obtuse-angulate. Preapical foveae deeply and distinctly present. Keel narrow, strongly compressed, its anterior apex truncate. Descending lateral striae carinate and convergent to apex, but their apical portions nearly parallel. Carinal striae completely impressed, divergent apically and basally, the anterior ends united with descending lateral striae. Lateral side of keel coarsely punctate, the punctures being separated by about 1.5 (1 – 2) times the diameter.

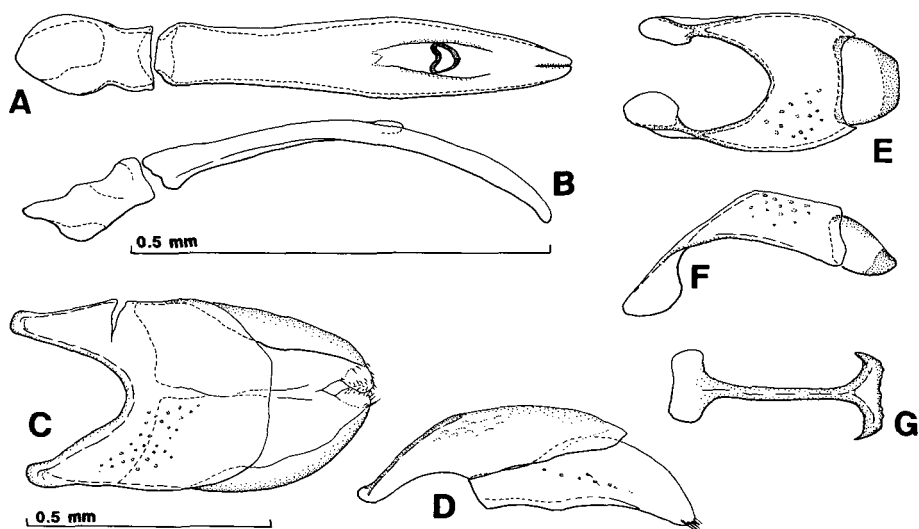


Fig. 155. *Hypocaccus (Hypocaccus) akanensis* M. Ôhara, sp. nov. A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

Anterior margin of mesosternum feebly emarginate, its marginal stria carinate and complete. Disk of mesosternum smooth. Meso-metasternal suture lightly impressed, accompanied with a coarsely crenated parallel line. Intercostal disk of metasternum smooth. Lateral metasternal stria well impressed and carinate, extending obliquely and posteriorly and reaching near hind coxa. Lateral disk densely covered with coarse, round and shallow punctures on basal 1/2, the punctures gradually becoming smaller and sparser; impunctate along the lateral stria and on posterior 1/2 of the disk. Metepisternum densely and coarsely punctate.

Intercostal disk of 1st abdominal sternum smooth, and completely striate on each side.

Protibia with 6 spinules on outer margin, its apical outer angle bearing 2 large denticles.

Male genitalia as shown in Fig. 155.

Specimens examined. Holotype, ♂, Mount Akan, Kushiro, Hokkaidō, 5/viii/1918, M. Suzuki (ELKU).

Distribution. Japan (Hokkaidō).

Remarks. The aedeagus of this species is similar in shape to that of *Hypocaccus* (*Hypocaccus*) *speculum* (Schmidt) (Kryzhanovskij and Reichardt, 1976: 225, fig. 443), but the punctuation of elytra is quite different.

Hypocaccus akanensis resembles superficially *H. siniae* but can be distinguished by the smaller body and the sutural stria being not united with marginal elytral stria.

SUBGENUS BAECKMANNIOLUS REICHARDT, 1926

Baeckmanniolus Reichardt, 1926b: 14 [type species: *Hister dimidiatus* Illiger, 1807: 41, originally designated].

Pachylopus Zimmermann in J. L. LeConte, 1869: 253 (part.), synonymized by Reichardt, 1926b: 14.

Diagnosis. Pronotum smooth, or a little covered with punctures behind each anterior angle. Frontal disk of head smooth, sometimes irregularly rugose in apical area.

Hypocaccus (*Baeckmanniolus*) *varians varians* (Schmidt, 1890) (Fig. 156, 157, 158)

Saprinus varians Schmidt, 1890: 55 [Japan; China]; Lewis, 1910: 58; Desbordes, 1919: 416.

Hypocaccus varians: Reichardt, 1926b: 15; Reichardt, 1941: 323, 326.

Hypocaccus (*Baeckmanniolus*) *varians*: Kryzhanovskij and Reichardt, 1976: 229.

Japanese name: Hamabe-emma-mushi.

Description. Body length, PPL, 2.45 – 4.19 mm (3.44 ± 0.10 , $n=20$), PEL, 2.22 – 3.60 mm (3.11 ± 0.08 , $n=20$). Width, 1.90 – 3.20 mm (2.56 ± 0.07 , $n=20$). Biometric data are given in Table 40. Body oval and moderately convex. Cuticle very strongly shining and black or nearly so with strong bronzy, or brassy lustre; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Frontal stria (Fig. 156C) carinate, complete and straight on each side.

Supraorbital stria well impressed. Disk of front with only 1 ruga, sometimes with 2 or 3 short ones. Epistoma scabrous.

Pronotal sides (Fig. 156A) rather feebly arcuate and feebly convergent on basal 4/5, thence strongly arcuate and convergent apically. Apical angles round. Marginal stria carinate and complete. Disk smooth, rarely with several moderate punctures in anterior angle. Basal margin of pronotum with 1 row of moderate punctures, which become finer near the middle and on the lateral 1/6.

Epipleura of elytra sparsely clothed with microscopic punctures and even. Marginal epipleural stria complete and finely impressed. Marginal elytral stria carinate, complete and densely punctate, its apical end extending along the posterior margin of elytron, and united with the apical end of sutural stria at medio-apical angle of elytron. External subhumeral stria absent. Internal subhumeral stria shortly present on median 1/3. Oblique humeral stria present on basal 1/3. First dorsal stria present on basal 1/2 and well impressed. Second dorsal stria a little longer than the 1st, and densely crenate apically. Third dorsal stria about as long as the 2nd, and densely crenate. Fourth dorsal stria shortly present on median area, composed of 5 or 6 punctures. Suture stria present on apical 2/3, finely impressed, its apical end united with the marginal elytral stria. Mediobasal area with a short arch consisting of the ends of 4th dorsal and suture striae, sometimes the arch extending apically, rarely continued to the basal end of suture stria. Surface of elytra smooth on basal 1/2; on apical 1/2 moderately and sparsely punctate except on extreme apex (around apical stria), the punctures being separated by about 1.5 (1 – 2) times the diameter.

Propygidium densely and coarsely punctate. Pygidium (Fig. 156D) densely and coarsely punctate on basal 2/3, the apical 1/3 being sparsely punctate along margin and mid line, with 2 convex and impunctate areas on both sides.

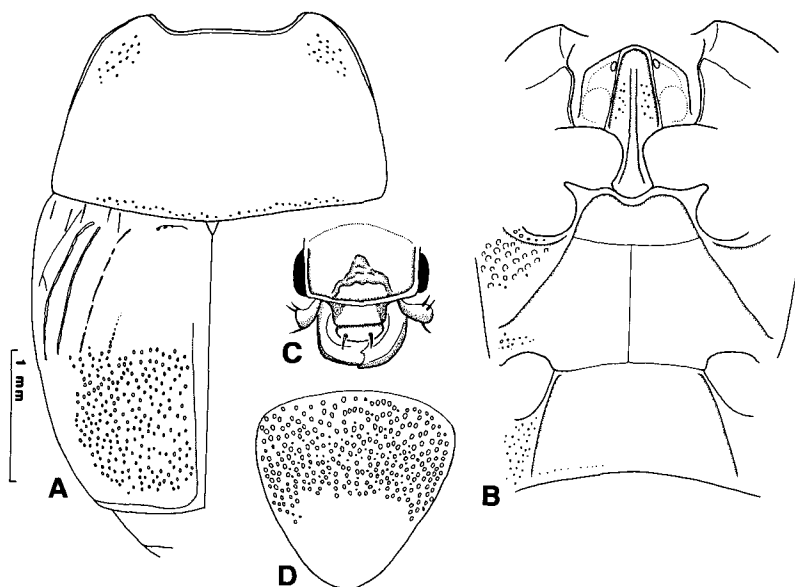


Fig. 156. *Hypocaccus (Baeckmanniolus) varians varians* (Schmidt). A: Pronotum and left elytron. B: Prosternum and meso- and metasterna. C: Head. D: Pygidium.

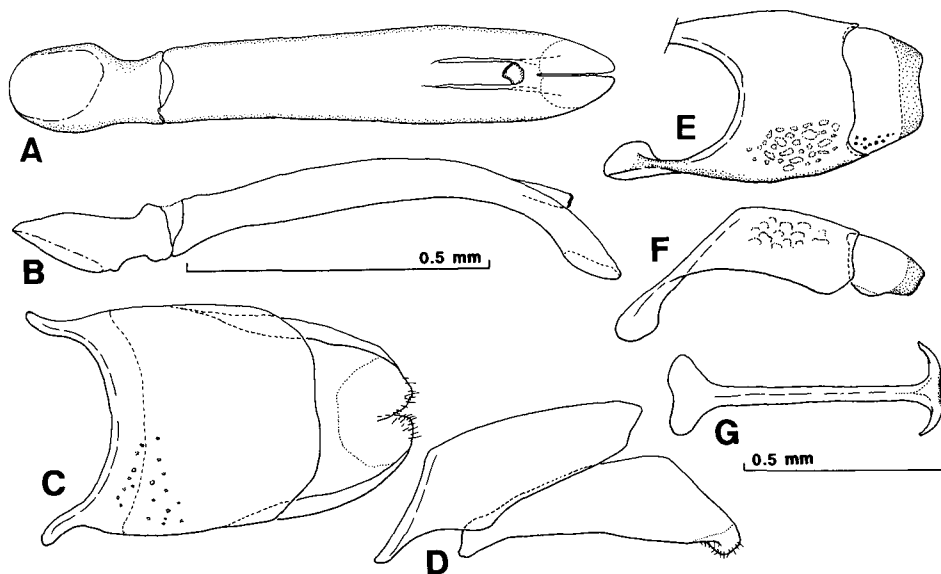


Fig. 157. *Hypocacaccus (Baeckmanniolus) varians varians* (Schmidt). A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th tergites, dorsal view. F: Ditto, lateral view. G: Ninth sternum (spicule), dorsal view.

Anterior margin of median portion of prosternum (Fig. 145B) obtuse-angulate. Preapical foveae distinctly present. Keel moderately compressed, its apex round. Descending lateral stria carinate and convergent to apex. Carinal striae present on basal 1/2 and convergent apically. Lateral sides of keel impunctate.

Anterior margin of mesosternum feebly emarginate, its marginal stria carinate and usually complete, sometimes interrupted at middle. Disk smooth. Meso-metasternal suture finely impressed, without a crenate parallel line. Intercostal disk of metasternum smooth, sparsely clothed with microscopic punctures except for a transverse apical band of sparse and fine punctures. Lateral metasternal stria well impressed, carinate, extending obliquely and posteriorly, reaching near hind coxa. Lateral disk evenly and coarsely punctate, the punctures becoming sparser apically. Metepisternum densely covered with moderate punctures.

Intercostal disk of 1st abdominal sternum completely striate on each side, and finely punctate along posterior margin.

Protibia with 7 spinules on outer margin.

Male genitalia as shown in Fig. 157.

Specimens examined. [Hokkaidô] 1 ex., Daisetsu, 7/viii/1954, T. Nakane (NA); 1 ex., Kitahama, Abashiri, 10/vii/1958, T. Nakane (NA); 2 exs., Toyokita-kaigan, Urahoro, 24/vi-7/vii/1993, S. Hori (HOR); 1 ex., Ishikari-Kakô, 19/ix/1987, M. Hinakura; 6 exs., Ishikari, 1/vii/1976, M. Kiuchi; 5 exs., Raisatsu, Ishikari, 9/vi/1993, S. Hori (HOR); 1 ex., Maruyama, Sapporo, 23/vi/1979, N. Nishikawa; 2 exs., Toyotaki, Sapporo, 14/vi/1987, M. Ôhara; 1 ex., Zenibako, Otaru, 24/vi/1954, T. Kumata (EIHU); 38 exs., Ditto, 23, 30/v, 8/vii/1977, 10/v/1978, 19/vi/1979, N. Nishikawa; 31 exs., Ditto, 14/v, 30/viii/1985, M. Ôhara; 2 exs., Kojô-hama, Shiraai, 30/vii/1953, M. Ôtake (NA); 1 ex., Iwanai, 13/viii/1946, Y. Nishijima; 3 exs., Shiriuchi, Oshima, 8/vii/1976, T. Kumata (EIHU); 10 exs., Nezaki-kaigan, Hakodate, 19/vii/1952, K. Honma (NA); 9 exs., Hakodate, 19/vii/1954, T. Nakane (NA); 25 exs., Ditto, 19/vii/1954, K. Sawada (NA); 2 exs.,

Ditto, 19/vii/1954, K. Sawada (NA); 4 exs., Ditto, 19/viii/1952, K. Honma (EIHU). Okushiri Is.: 1 ♀, Aonae, 28/vi/1986, Y. Kusui.

[Honshū] Yamagata-ken: 1 ex., Fukura, 11/vi/1972, H. Takizawa. Fukushima-ken: 1 ex., Nashidaira, Fukushima-shi, 3/vii/1988, K. Tazoe; 11 exs., Fujima-kaigan, Iwaki, 25/vi/1988, K. Tazoe. Chiba-ken: 130 exs., Ōami, 19/vi/1984, 20/v/1986, 1/iv/1987, M. Ōhara; 5 exs., Shirako, 18/v/1984, M. Ōhara; 1 ex., Katsuura, 3/viii/1963, M. Ishida; 1 ex., Iwai, Bōsō-hantō, 23/viii/1966, Y. Kusui; 2 exs., Narashino, 18/vi/1963, S. Kondo; 1 ex., Cape Futtu, 2/vii/1961, H. Yamazaki (NA); 4 exs., Ichinomiya, Kazusa, 6/vi/1936, T. Nakane (NA). Kanagawa-ken: 2 exs., Aburatsubo, 11/v/1959, S. Kondo; 2 exs., Koshigoe, 3/viii/1944, Y. Kurosawa (NA); 5 exs., Kamakura-kōkō-eki, Shichiri-hama, Kamakura, 20/iv/1991, K. Haga. Niigata-ken: 1 ex., Niigata-shi, 5/v/1933, K. Baba (NA). Shizuoka-ken: 1 ex., Heda, Mihama-misaki, Izu-hantō, 7/vi/1974, M. Ishida. Aichi-ken: 35 exs., Miya, Mikawa, 1-2/ix/1947, S. Ōsawa (NA). Wakayama-ken: 4 ex., Nachi, Kii, 19/vii/1946, 26, 29/iv/1947, S. Ōsawa (NA); 1 ex., Ditto, 28/iii/1953, K. Sawada (NA); 3 exs., Shingū, southern Kii, 10/vii/1946, S. Ōsawa (NA); 1 ex., Minabe, sea shore, 2/vi/1966, M. Yoshida (NA). Ōsaka-fu: 1 ex., Takaisino-hama, 10/ix/1966, no collector's name. Ishikawa-ken: 10 exs., Uchinada-sakyū, 31/viii/1968, H. Ebihara (NA). Hyōgo-ken: 1 ex., Hiraiso, 14/viii/1954, T. Shibata (NA); 2 exs., Akashi, 8/v/1954, H. Ishida (NA); 3 exs., Mikage-kaigan, 22/vii/1938, K. Sakaguchi (NA). Okayama-ken: 2 exs., Ushimado, Oku, 20/viii/1975, T. Aono (NA). Izu Isles: 2 exs., Shikine-jima, 1941, K. Oyama (NA).

[Shikoku] Tokushima-ken: 1 ex., Kiki, Yuki-chō, 4/v/1986, S. Mano; 2 exs., Anan, Kitanawaki-kaigan, 1/vi/1986, S. Mano.

[Kyūshū] Fukuoka-ken: 2 exs., Satsuki-matsubara, 8/v/1983, S. Nakao (NA); 5 exs., Ainosima, 22/v/1983, S. Nakao (NA). Nagasaki-ken: 2 exs., Kuchinotsu, Shimabara, 20/ix/1977, S. Imasaka; 3 exs., Noda-hama, Kazusa-chō, 30/iii/1985, S. Imasaka; 1 ex., Ditto, 5/iv/1977, S. Imasaka. Kagoshima-ken: 26 exs., Chōsa, 14/vi/1983, 22/v/1984, M. Ōhara; 24 exs., Fukiage, 29/vii/1984, M. Ōhara; 1 ex., Sata-misaki, 29/v/1971, K. Tazoe. Tsushima Is.: 8 exs., Kuro-shima, 4/viii/1959, K. Tsukamoto (NA).

[Nansei Isles] Tane-ga-shima Is.: 1 ♀, 59 exs., Hamada, 31/vii/1984, Y. Harada. Amami-Ōshima Is.: 69 exs., Akaogi, 2/vii/1984, M. Ōhara. Tokuno-shima Is.: 2 exs., Kametsu, 24/iv/1954, T. Kumata (EIHU). Yoron Is.: 1 ex., 27/iii/1967, T. Matsumoto. Ishigaki Is.: 1 ex., Botanical Garden, Banna, 12/vi/1974, H. Makihara.

Distribution (Fig. 158). Japan (Hokkaidō, Honshū, Shikoku, Kyūshū); China; Taiwan; Sakhalin; Viet-Nam; Philippines; Sri Lanka; Solomon Is.; Australia.

Remarks. *Hypocaccus varians* resembles *H. sinæ* superficially; however, it can easily be distinguished from the latter by the mesosternum without carinal line, the elytral sutural stria usually absent on the basal 1/2 and the apical 1/2 of the pygidium impunctate.

Table 40. Biometric data of *Hypocaccus v. varians* (Schmidt) and *H. v. hatsune* (Nakane).

	<i>H. v. varians</i>	<i>H. v. hatsune</i>
APW	0.72-1.21 (1.02±0.03) 20	0.62-0.98 (0.87±0.03) 13
PPW	1.67-2.71 (2.31±0.06) 20	1.54-2.26 (1.98±0.07) 13
PL	0.88-1.37 (1.12±0.03) 20	0.85-1.21 (1.06±0.03) 13
EL	1.41-2.22 (1.89±0.05) 20	1.18-1.93 (1.61±0.07) 13
EW	1.90-3.20 (2.56±0.07) 20	1.67-2.45 (2.14±0.08) 13
ProW	1.21-1.90 (1.53±0.04) 20	1.01-1.57 (1.27±0.05) 13
ProL	0.36-0.59 (0.46±0.01) 20	0.26-0.43 (0.36±0.01) 13
PyL	1.14-1.81 (1.48±0.04) 20	1.05-1.67 (1.32±0.05) 13
PTL	0.65-1.01 (0.88±0.02) 20	0.59-0.88 (0.77±0.03) 13
MSTL	0.62-1.05 (0.87±0.02) 20	0.56-0.88 (0.74±0.03) 13
MTTL	0.65-1.18 (1.01±0.03) 20	0.65-1.08 (0.90±0.03) 13

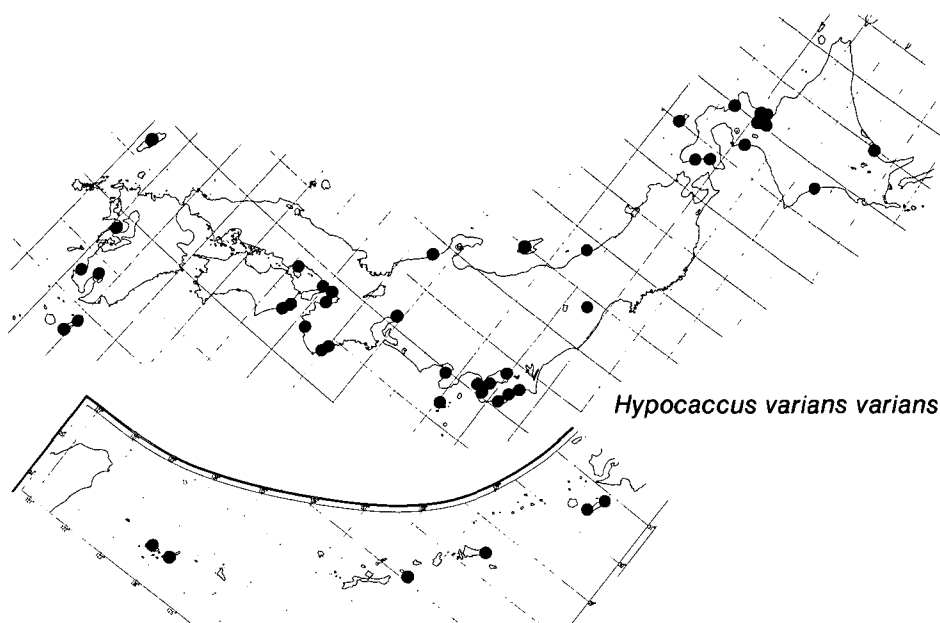


Fig. 158. Collection sites of *Hypocaccus (Baeckmanniolus) varians varians* (Schmidt) in Japan.

Hypocaccus varians is a very common species. It lives on sandy beaches and occurs in various decaying animal matters, such as carrion of birds, dog, turtle and fish.

Hypocaccus (Baeckmanniolus) varians hatsune (Nakane, 1977)

Baeckmanniolus varians hatsune Nakane, 1977: 148, 157 [Hatsune-ura, Chichi-jima, Ogasawara].

Japanese name: Ogasawara-hamabe-emma-mushi.

Additional description. Body length, PPL, 2.45 – 3.83 mm (3.06 ± 0.12 , $n=13$), PEL, 1.99 – 3.20 mm (2.76 ± 0.11 , $n=13$). Width, 1.67 – 2.45 mm (2.14 ± 0.08 , $n=13$). Biometric data are given in Table 40. Punctuation of pygidium represented only on basal $1/3 - 1/2$.

Specimens examined. Holotype, Hatsune-ura, Chichi-jima, Bonin Is. (Ogasawara Is.), 5/vi/1975, K. Ichikawa (NSMT); Paratypes, 13 exs., Ditto (NA); 31 exs., Ditto (NSMT).

Distribution. Japan (Ogasawara Isles).

GENUS EOPACHYLOPUS REICHARDT, 1926

Eopachylopus Reichardt, 1926b: 14 [type species: *Pachylopus ripae* Lewis, 1885a: 469, originally designated].

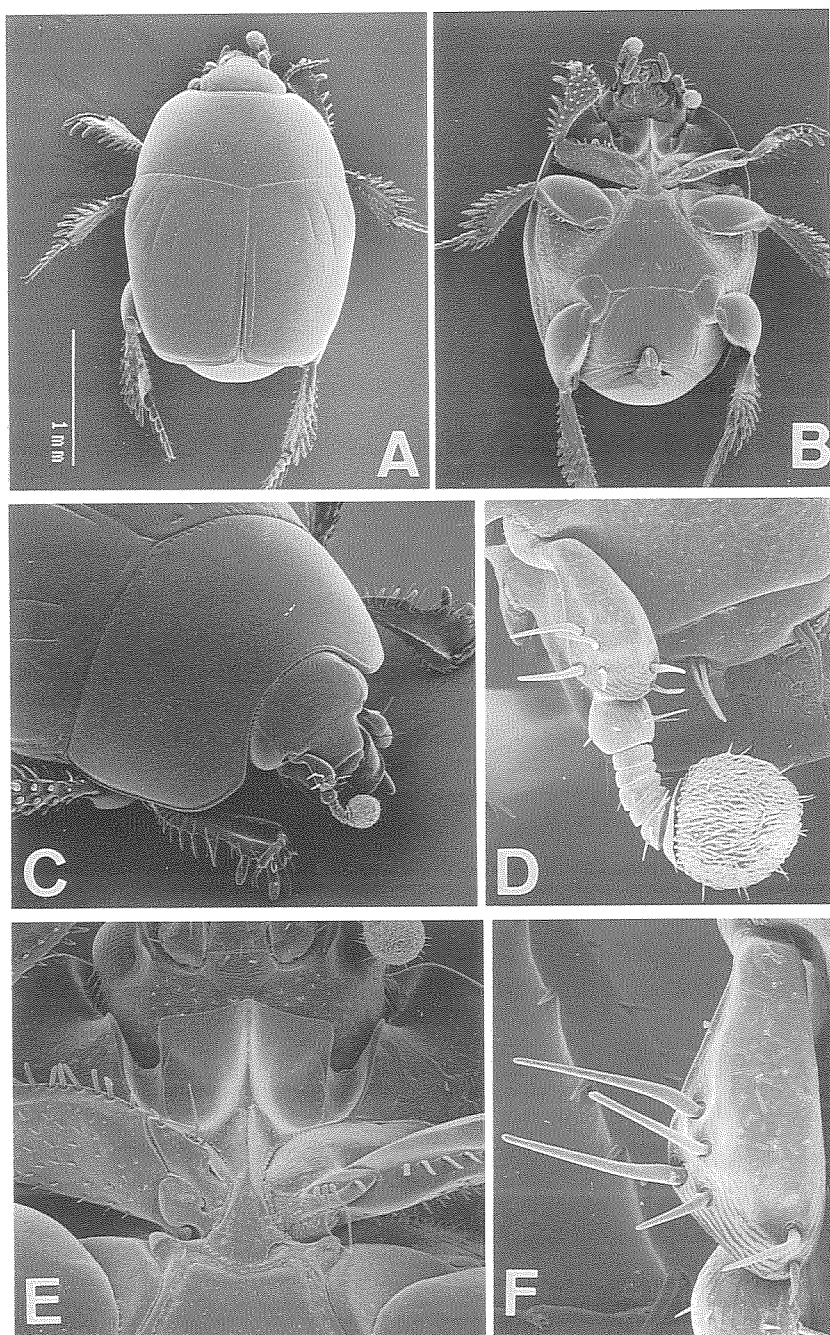


Fig. 159. *Eopachylopus ripae* (Lewis). A: Adult, dorsal view. B: Ditto, ventral view. C: Head and pronotum, oblique frontal view. D: Antenna. E: Prosternum, ventral view. F: Scape of antenna.

Eopachylopus ripae (Lewis, 1885)
(Fig. 159, 160, 161, 162)

Pachylopus ripae Lewis, 1885a: 469 [Enoshima and Hakodate, in Japan].

Eopachylopus ripae: Reichardt, 1926b: 14.

Eopachylopus ripae ab. *tsherskii* Reichardt, 1941: 328.

Neopachylopus ripae f. *rufofasciatus* Ôsawa, 1952: 4.

Japanese name: Tsuya-hamabe-emma-mushi.

Description. Body length, PPL, 2.09 – 3.34 mm (2.61 ± 0.06 , n=20), PEL, 1.96 – 2.91 mm (2.40 ± 0.05 , n=20). Width, 1.64 – 2.49 mm (1.98 ± 0.04 , n=20). Biometric data are given in Table 41. Body oval and strongly convex. Cuticle shining and black wholly or with a red spot on each elytron, rest of body black; antennae dark rufopiceous with club rufotestaceous; legs dark reddish brown.

Frontal stria of head (Fig. 159C) lightly carinate anteriorly and absent laterally. Disk smooth, sparsely clothed with microscopic punctures. Epistoma smooth.

Pronotal sides (Fig. 159A) nearly straight and weakly convergent on basal 5/6, thence strongly arcuate and convergent apically. Apical angles round. Marginal stria complete and feebly carinate basally. Disk smooth and impunctate.

Marginal epipleural stria weakly carinate and complete. Marginal elytral stria strongly carinate and complete, its apical end extending across elytral apex and united with apical end of sutural stria. Surface of epipleura between marginal epipleural and elytral striae smooth and shining on basal 1/2; on apical 1/2 sparsely with shallow and transverse impressions. Subhumeral stria absent. Oblique humeral stria sharply impressed on basal 1/2. First, 2nd and 3rd dorsal striae well impressed, beginning from basal 1/6; 1st shortly present, ending at basal 1/3; 2nd ending at basal 1/2; 3rd ending at basal 2/3. Fourth dorsal stria confined to basal region, usually represented by an arch. Sutural stria deeply impressed, nearly complete, beginning at basal fifth and its apical end united with end of marginal elytral stria. Surface of elytra smooth, sparsely with microscopic punctures.

Propygidium sparsely covered with fine punctures, which are coarser and denser laterally. Interspace among punctures with lightly impressed, fine and irregularly transverse alutaceous microsculpture, which are heavily impressed on basal 1/2. Pygidium sparsely clothed with microscopic punctures, and shining. Interspace among punctures with more lightly impressed irregularly transverse microsculptures than on propygidium.

Anterior margin of median portion of prosternum (Fig. 159E) obtuse-angulate. Preapical fovea weakly impressed on lateral side of keel at apical 1/6. Keel strongly compressed, on basal 1/3 represented by a triangular disk. Carinal striae of keel distinctly and shortly impressed between precoxae, convergent anteriorly and united with each other at apex. Descending lateral striae shortly present and convergent apically, their apical ends attaining at middle of keel.

Anterior margin of mesosternum strongly emarginate medially, its marginal stria well impressed, complete and carinate. Disk smooth, sparsely with microscopic punctures. Meso-metasternal suture sparsely and coarsely crenate. Intercostal disk of metasternum smooth, sparsely clothed with microscopic punctures; feebly depressed on anteromedian area, and strongly depressed on nearly apical 1/2 along longitudinal

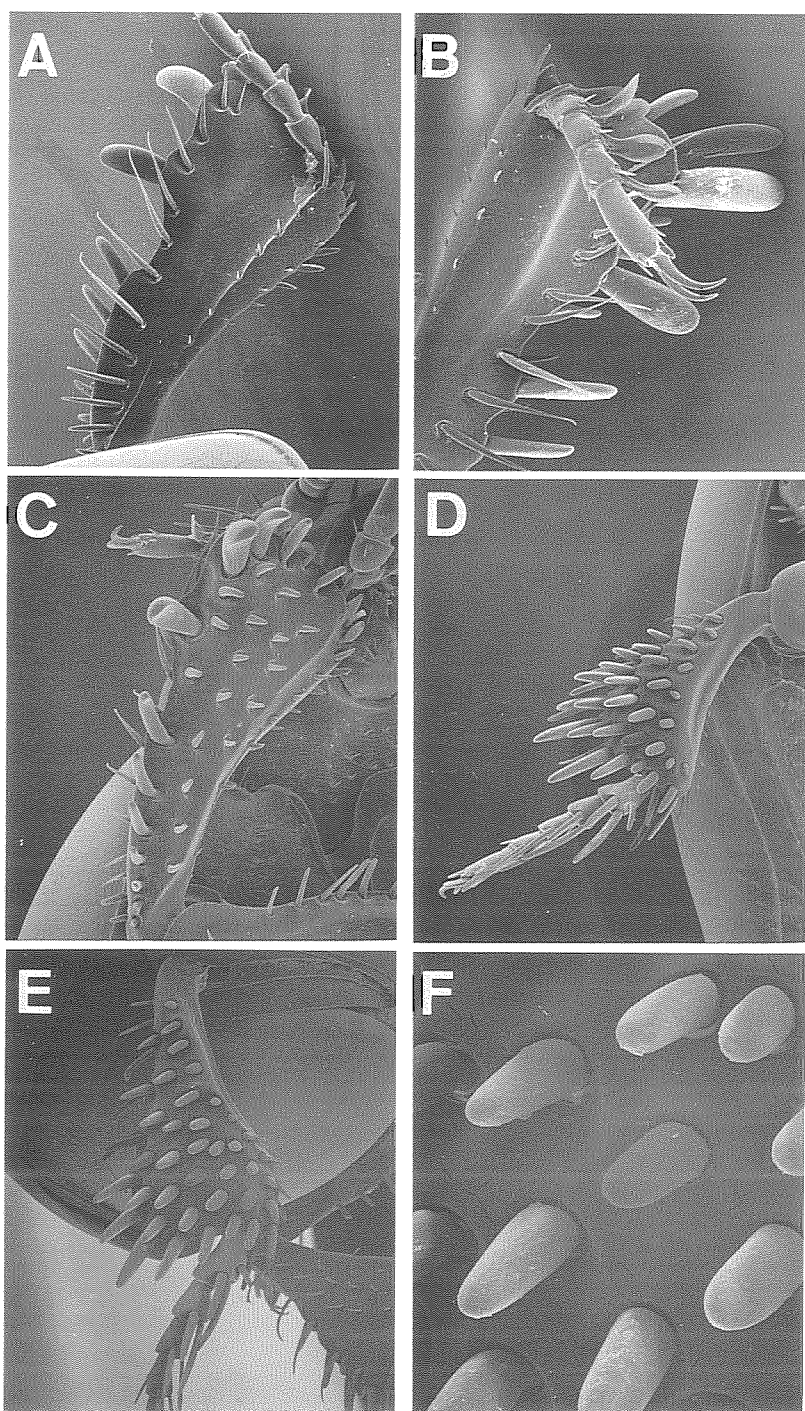


Fig. 160. *Eopachylopus ripae* (Lewis). A: Protibia, dorsal view. B: Tarsus of fore leg. C: Protibia, ventral view. D: Mesotibia, ventral view. E: Metatibia, ventral view. F: Setae of metatibia.

suture. Lateral metasternal stria well impressed and carinate, extending obliquely and posteriorly, reaching near hind coxae. Lateral disk densely covered with large, shallow and setiferous punctures. Interspace among punctures with fine, irregular and transverse alutaceous microsculptures. Posterior mesocoxal stria well impressed, carinate, and extending along posterior margin of mesocoxal cavity. Disk of metepisternum densely covered with large punctures.

Intercoxal disk of 1st abdominal sternum broadly depressed mediobasally and sparsely covered with moderate punctures before posterior corner. Lateral stria of the disk complete, well impressed and carinate.

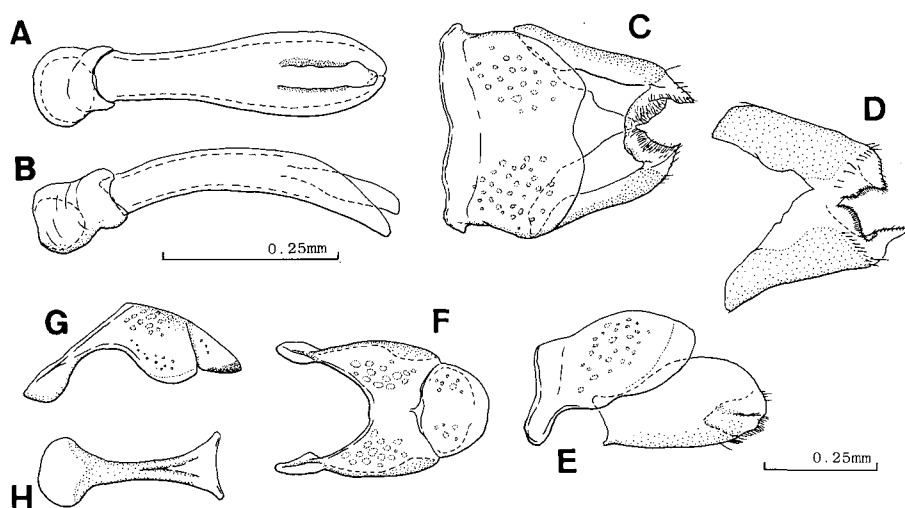


Fig. 161. *Eopachylopus ripae* (Lewis) A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum, dorsal view. D: Apex of 8th sternum, ventral view. E: Eighth tergite and sternum, lateral view. F: Male genitalia, 9th and 10th tergites, dorsal view. G: Ditto, lateral view. H: Ninth sternum (spicule), dorsal view.

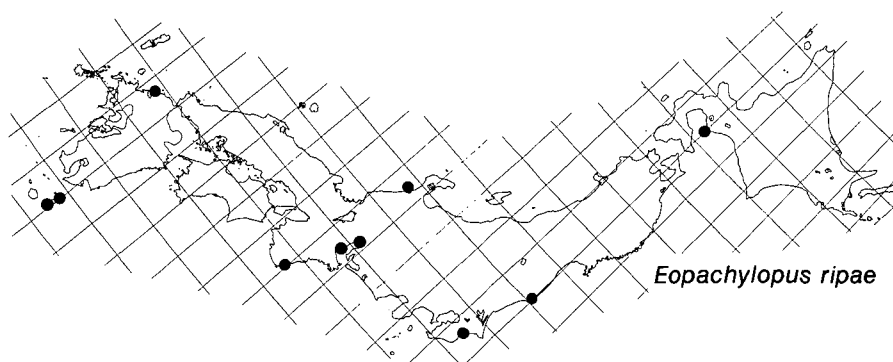


Fig. 162. Collection sites of *Eopachylopus ripae* in Japan.

Table 41. Biometric data of *Eopachylopus ripae* (Lewis).

APW	0.72-1.11	(0.88±0.02)	20
PPW	1.50-1.99	(1.81±0.03)	20
PL	0.72-1.05	(0.85±0.02)	20
EL	1.18-1.83	(1.52±0.04)	20
EW	1.64-2.49	(1.98±0.04)	20
ProW	0.95-1.47	(1.14±0.03)	20
ProL	0.20-0.39	(0.25±0.01)	20
PyL	0.86-1.48	(1.17±0.04)	20
PTL	0.59-0.92	(0.75±0.02)	20
MSTL	0.52-0.92	(0.72±0.02)	20
MTTL	0.65-1.08	(0.85±0.02)	20

Protibia (Fig. 160A, B, C) with 10 spines on outer margin, the 3 spines on apical 1/2 being clavate. Ventral sides of meso- and metatibiae with many stout spines.

Male genitalia as shown in Fig. 161.

Specimens examined. [Hokkaidô] 2 exs., Muroran, 25/vi/1960, T. Yamashita.

[Honshû] Fukushima-ken: 1 ex., Fujima-kaigan, Iwaki, 25/vi/1988, K. Tazoe. Chiba-ken: 7 exs., Ôami, 19/vi/1984, 1/v/1990, M. Ôhara. Aichi-ken: 1 ex., Miya, Mikawa, 1-2/ix/1947, S. Ôsawa (NA). Mie-ken: 5 exs., Akogi-ga-ura, Mie Coast, 30/vi/1957, M. Gotô (NA and NSMT); 1 ex., Tsukaigan, 30/v/1957, Z. Naruse (NSMT). Wakayama-ken: 32 exs., Nachi, southern Kii, 26/iv/1947, S. Ôsawa (NA); 2 exs., Ditto, 19/vii/1946, S. Ôsawa (NA); 14 exs., Ditto, 29/iv/1947, S. Ôsawa (NA). Ishikawa-ken: 7 exs., Uchinada-sakyû, 31/viii/1968, H. Ebihara.

[Kyûshû] Fukuoka-ken: 1 ex., Satsuki-Matsubara, 8/v/1983, S. Nakao (NA); 1 ex., Ainoshima, 22/v/1983, S. Nakao (NA).

[Nansei Isles] Tane-ga-shima Is.: 2 exs., Hamada, 31/vii/1984, Y. Harada.

Distribution (Fig. 162). Japan (Hokkaidô, Honshû, Shikoku, Kyûshû, Nansei Isles).

Remarks. *Eopachylopus ripae* is easily recognized by the character states given in the key and description; it is hardly confused with any other species of the tribe.

The species occurs under decaying bodies of fish on sandy beaches.

6. 3. 10. SUBFAMILY TRYPETICINAE BICKHARDT, 1913

GENUS TRYPETICUS MARSEUL, 1864

Trypeticus Marseul, 1864: 281 [type species: *Trypeticus gilolous* Marseul, 1864: 283, designated by Bickhardt, 1916: 53]; Schmidt, 1893a: 15; Jakobson, 1911: 638, 642; Bickhardt, 1916-17: 53; Reichardt, 1941: 73; Kryzhanovskij and Reichardt, 1976: 79.

Key to the Japanese species of the genus *Trypeticus*

- 1(2) Body shining. Pronotum without lateral stria. *T. fagi* (Lewis, 1884)
2(1) Body filiform. Pronotum with a complete lateral stria. *T. venator* (Lewis, 1884)

Trypeticus fagi (Lewis, 1884)

(Fig. 163, 164, 165, 166)

Tryponaeus fagi Lewis, 1884: 138 [Japan, no further locality].

Trypeticus fagi: Lewis, 1905b: 7; 1912: 251 [male and female genitalia illustrated].

Japanese name: Tsutsu-emma-mushi.

Description. Male: Body length, PPL, male, 3.11 – 3.50 (3.36 ± 0.04 , $n=10$) mm, female, 3.11 – 3.60 mm (3.42 ± 0.06 , $n=7$), PEL, male, 2.84 – 3.11 mm (2.99 ± 0.03 , $n=10$), female, 2.94 – 3.14 mm (3.07 ± 0.02 , $n=7$). Width, male, 1.31 – 1.34 mm (1.31 ± 0.001 , $n=10$), female, 1.24 – 1.31 mm (1.28 ± 0.01 , $n=7$). Biometric data are given in Table 42. Body cylindrical, moderately stout. Cuticle shining, black; tibiae, tarsi, and antennae dark rufopiceous.

Head without frontal stria (Fig. 164C, D); surface slightly depressed on median area, and sparsely clothed with fine punctures which are separated by 2 – 5 times their diameter and become coarser posteriorly; surface among the punctures extremely finely covered with alutaceous ground sculpture.

Anterior margin of pronotum shallowly emarginate on median 2/3; sides parallel (Fig. 163) and straight; marginal stria complete and carinate laterally, and , on anterior margin, absent behind head; surface of disk densely and coarsely punctate, but not on longitudinal mid line, the punctures becoming denser on apical 1/4 and on area along lateral margin; surface among coarse punctures usually impunctate and shining, but sometimes covered with fine punctures, which are 1/3 as large as the coarse punctures.

Epipleura broad, not concave. Marginal epipleura and elytral stria absent. Narrow band along epipleural margin impunctate, but extremely finely striate. Sutural stria completely impressed. Surface of elytra irregularly scattered with coarse punctures which are somewhat smaller than those of the pronotum and usually separated by 2 – 5 times their diameter, the punctures becoming coarser on basal margin and denser along the sutural line and on lateral area along epipleura; a small oblong area on humeral region impunctate; extreme apex of elytra impunctate.

Disk of propygidium (Fig. 164) evenly covered with round and shallow punctures, which are a little coarser than the elytral ones and separated by about their own diameter, and with other fine punctures intermingled. Punctuation of pygidium

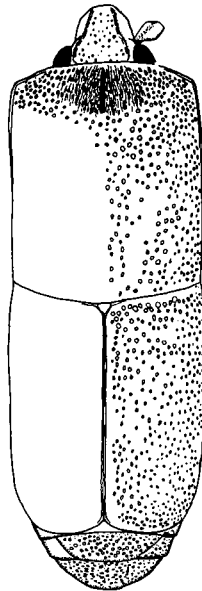


Fig. 163. *Trypeticus fagi* (Lewis). A: Adult, dorsal view.

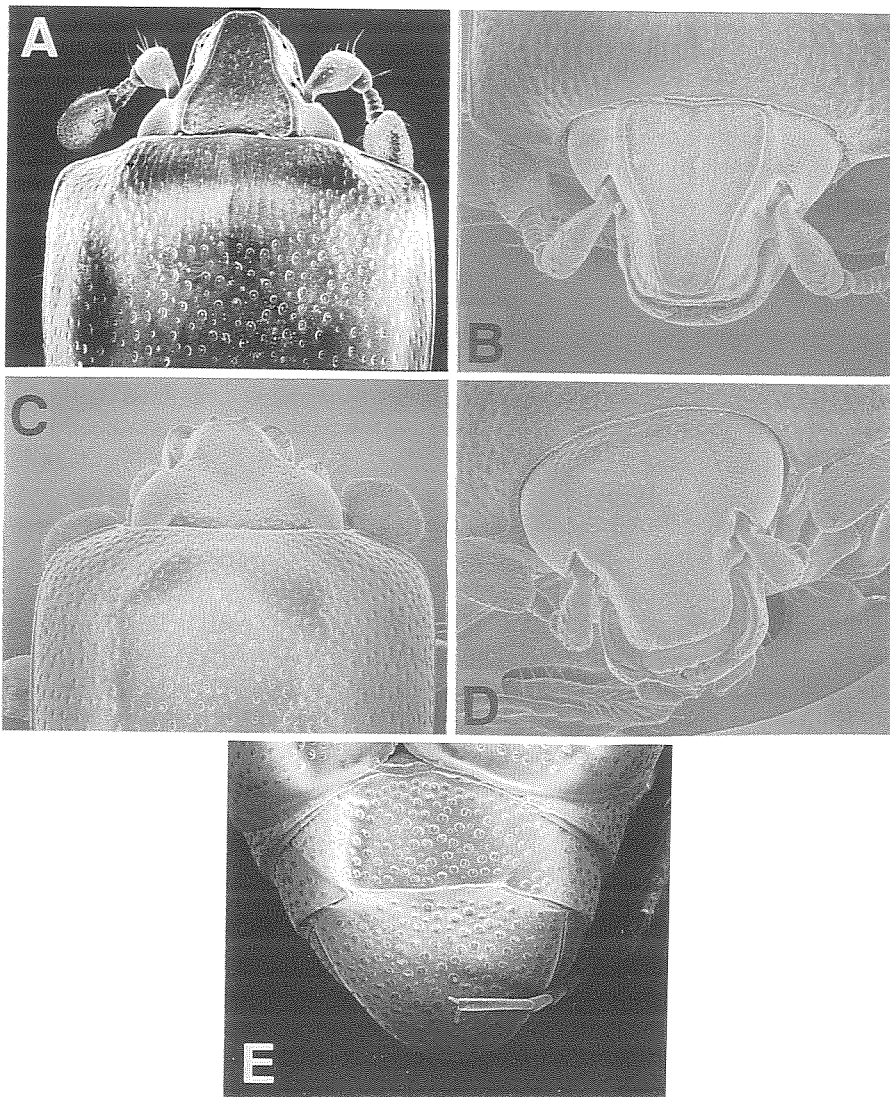


Fig. 164. *Trypeticus fagi* (Lewis). A, B, E: Female. C, D: Male. A, C: Head and pronotum, dorsal view. B, D: Head, frontal view. E: Propygidium and pygidium, dorsal view.

similar to that of propygidium, but much sparser, the punctures becoming finer apically; tip of pygidium clearly acute.

Prosternal process longitudinal quadrangular; anterior margin straight; marginal stria of the process nearly complete and somewhat carinate; disk densely covered with coarse and shallow punctures and intermingled with fine punctures among the coarse ones; surface among these punctures finely clothed with alutaceous ground sculpture.

Median 1/3 of anterior margin of mesosternum nearly straight; lateral 1/3 inwardly curved, fitting to posterior margin of procoxa. Lateral sides of mesosternum nearly parallel and straight on basal 1/2 and divergent apically on apical 1/2; each lateral side marginate and deeply carinate; punctation of disk similar to that of prosternum.

Meso-metasternal suture impressed and obtuse-angulate (about 120°) at middle. Metasternum clearly depressed on longitudinal mid line; lateral metasternal striae slightly divergent posteriorly and impressed on basal 2/3. Intercoxal disk of metasternum sparsely covered with coarse, somewhat longitudinally oblong and shallow punctures which are separated by 1 – 3 times the diameter; surface among coarse punctures sparsely and finely punctate except on a broad band along longitudinal mid line. Lateral disk of metasternum sparsely and coarsely punctate, the punctures much sparser than those of the intercoxal disk. Metepisternum with 2 rows of dense and coarse punctures.

Intercoxal disk of 1st abdominal sternum densely covered with coarse punctures which are a little smaller than those of the metasternal intercoxal disk, the punctures becoming sparser on basal 1/2.

Protibia slender, with 5 large denticles on outer margin. Mesotibia with 5 denticles on outer margin.

Female. In general appearance similar to the male except in the following character states: head (Fig. 164A, B) with clear frontal marginal stria which is strongly carinate; pronotum distinctly with short costa on apical 1/4 on longitudinal mid line, and area around the costa densely clothed with longitudinal short rugae and fine alutaceous ground microsculpture where it is lusterless; pronotum evenly punctate wholly, without impunctate area on longitudinal mid line; punctuation of pygidium much denser than that of the male; tip of pygidium round, not acute; prosternal process without marginal stria.

Male genitalia as shown in Fig. 165.

Specimens examined. [Honshû] Aomori-ken: 1 ♀, no date, A. Abe; 1 ♂, Oirase, Nishigun, Fukaura-machi, 23/v/1976, A. Abe; 1 ♂, Yachi Spa., Towada, 26/vii/1952, Y. Kurosawa. Fukushima-ken: 1 ♂, Yunohana, Minami-Aizu, 20/vii/1963, K. Tazoe; 1 ♀, Nagasaka, Iide-san, 14/vi/1970, K. Tazoe; 1 ♂, Hinoemata, 30/v/1982, H. Makihara; 1 ♀, Shin-machi, Tateiwa, Minami-Aizu, 18/vi/1947, Y. Kurosawa. Saitama-ken: 1 ♂, Yanagi-koya, Chichibu, 22/vii/1933, no collector's name. Gifu-ken: 1 ♂, Idani, Kawai, Hida, 5/vi/1955, H. Torigai; 2 ♂♂, Ditto, 1/vi/1957, T. Nakane. Mie-ken: 1 ♂, Mie Univ. Forest, Ichishi-gun, 11/vi/1956, H. Ichihashi; 1 ♀, Ditto, 12/vi/1956, H. Ichihashi. Kyôto-fu: 1 ♀, Ashiû, vi/1951, A. N.

[Shikoku] Tokushima-ken: 1 ♂, Ashû, 27/vii/1940, M. Tokunaga (Host: *Aesculus turbinata* Blume). Ehime-ken: 1 ♀, Omogo, 11/vii/1956, Z. Naruse and M. Satô.

Table 42. Biometric data of *Trypeticus fagi* (Lewis).

	Male	Female
PW	1.21-1.31 (1.27± 0.01) 11	1.24-1.31 (1.27±0.01) 7
PL	1.44-1.57 (1.49± 0.01) 11	1.47-1.64 (1.57±0.02) 7
EL	1.31-1.54 (1.46± 0.02) 11	1.34-1.50 (1.43±0.02) 7
EW	1.31-1.34 (1.31±0.001) 10	1.24-1.31 (1.28±0.01) 7
ProW	0.72-0.85 (0.79± 0.01) 11	0.69-0.82 (0.75±0.02) 7
ProL	0.29-0.36 (0.33± 0.01) 11	0.26-0.33 (0.30±0.01) 7
PyL	0.49-0.59 (0.52± 0.01) 11	0.49-0.65 (0.57±0.02) 7
PTL	0.52-0.65 (0.62± 0.01) 11	0.52-0.62 (0.58±0.01) 7
MSTL	0.49-0.65 (0.59± 0.02) 11	0.52-0.65 (0.58±0.02) 7
MTTL	0.59-0.69 (0.63± 0.01) 11	0.59-0.65 (0.62±0.01) 7

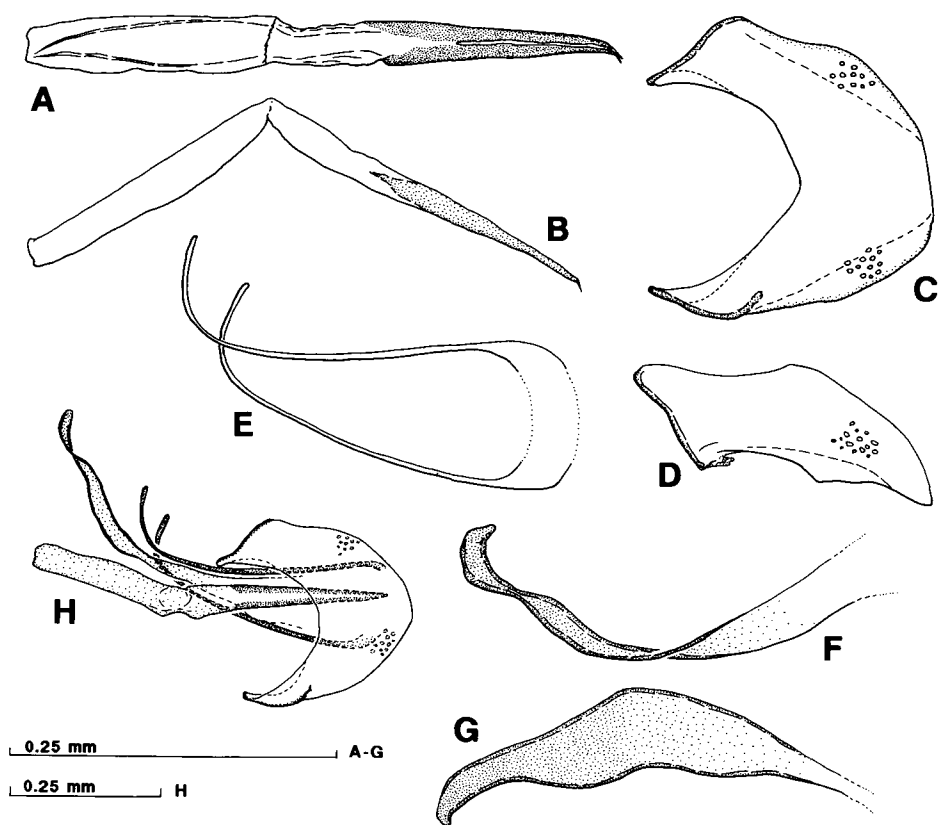


Fig. 165. *Trypeticus fagi* (Lewis) A: Aedeagus, dorsal view. B: Ditto, lateral view. C: Male genitalia, 8th tergite and sternum (?), dorsal view. D: Ditto, lateral view. E: Male genitalia, 9th and 10th (?), dorsal view. F: Ninth sternum (spicule), dorsal view. G: Ditto, lateral view. H: Male genitalia, dorsal view.

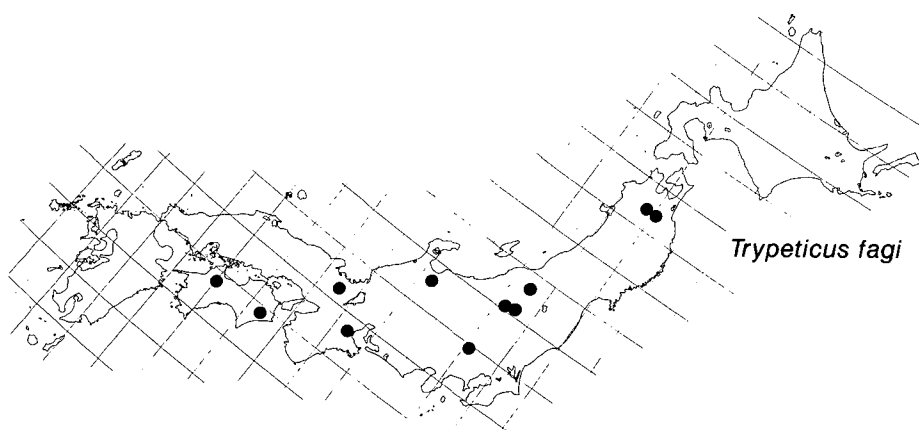


Fig. 166. Collection sites of *Trypeticus fagi* (Lewis) in Japan.

[?] 1♂ 1♀, Sakashimo, Hora, 13/vi/1954, H. Torigai.

Distribution (Fig. 166). Japan (Honshû, Shikoku, Kyûshû, Izu Isles, Yakushima Is.).

Trypeticus venator (Lewis, 1884)

Tryponaeus venator Lewis, 1884: 138 ["South Japan, at Yuyama and Konose"].

Trypeticus venator: Lewis, 1905b: 8.

Japanese name: Hosotsutsu-emma-mushi.

Specimens examined. No material of this species has been available for my study.

Distribution. Japan (Honshû, Kyûshû); Taiwan.

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